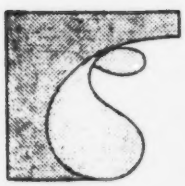
AN ASSESSMENT OF INDUCED INVESTMENTS RESULTING FROM THE PURCHASES OF GOODS AND SERVICES MADE BY THE CANADIAN PARKS SERVICE

1988-89



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AN ASSESSMENT OF INDUCED INVESTMENTS RESULTING FROM THE PURCHASES OF GOODS AND SERVICES MADE BY THE CANADIAN PARKS SERVICES, FISCAL YEAR 1988-89

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EXECUTIVE SUMMARY

While several previous studies have measured the economic impacts attributable to the Canadian Parks Service, one source of impact has always been ignored. Businesses which provide goods and services for the Canadian Parks Service regularly invest in new capital facilities and this investment, in turn, generates additional economic impacts that have never yet been quantified. This study represents a first attempt to measure the extent of investment attributable to purchases of goods and services by the Canadian Parks Service and to quantify the economic impacts associated with this investment.

A literature search produced a number of Canadian studies which attempted to measure induced investment, but only one of these was based on sound economic theory and econometric techniques. This example was the Tourism Impact Model developed by the Federal Government to predict the investment implications and impacts of various tourism development strategies. This model concluded that investment in one year is directly related to the value of sales in the preceding year, and the amount of investment that can be attributed to a particular economic sector was directly proportional to the percent of total value of sales contributed by that economic sector.

By adapting this model to analyze historical data, rather than make projections, the extent of investment in 1988/89 that can be attributed to purchases of goods and services by the Canadian Parks Service was estimated. On a national basis, it was found that the $118.3 million in spending by the Canadian Parks Service during 1987/88 accounted for only one hundredth of one percent of the $840.0 billion in national sales by five major economic sectors. The corresponding level of investment in the following year (1988) was estimated to be $106.6 billion, of which the portion attributable to the Canadian Parks Service was determined to be approximately $15.0 million.

The economic impacts resulting from this amount of investment were determined using multiplier coefficients for the construction industry. The resulting analysis showed that investment attributable to the Canadian Parks Service in 1988/89 accounted for approximately $13.1 million of Canadian Gross Domestic Product (GDP), $9.0 million in labour income and 245.6 person-years of employment.

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1.0 INTRODUCTION

Many previous studies have documented the extent to which national parks, national historic parks and sites, and canals have provided economic benefits for Canada and its provinces and territories. These studies have typically identified the extent of labour income and employment generated through spending by park visitors and by Canadian Parks Service purchases of goods and services to develop and operate these national heritage facilities.

According to these studies, the economic impacts generated by national heritage locations in Canada have been sizable. In 1981/82, the total impacts on the Canadian economy were estimated to have included $497 million in labour income and 29,457 person-years of employment[1]. Similarly, in 1987/88, it was determined that the Northern Parks Program generated $13.8 million in labour income and 501 person-years of employment in the Yukon and NWT.[2]

While the methodology used in these studies adequately addressed the economic impacts that arise directly from spending by both park visitors and the Canadian Parks Service, no allowance was made for the fact that businesses which provide these goods and services also invest in new capital facilities and these new investments generate additional economic impacts. Consequently, not all of the economic benefits of national heritage sites have been addressed in existing studies.

The purpose of this study is to examine the question of private-sector induced expenditures as they relate to spending by the Canadian Parks Service and to assess the economic impacts generated by these investment expenditures. To achieve this goal, it is necessary to:

- devise a methodology which allows estimation of the impacts of private-sector induced spending; and,
- employ this methodology to quantify the impact resulting from purchases of goods and services by the Canadian Parks Service in 1987/88.

As background to the development of a methodology to assess the economic impacts of private-sector investment induced through purchases of goods and services by the Canadian Parks Service, a review of recent projects is provided in Section 2.0. This literature review considers the suitability of employing these methods and models, and identifies those issues pertinent to the development of an appropriate evaluation methodology.

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1 Parks Canada (1983). Evaluation of the Impact on the Canadian Economy of Spending Attributable to National Heritage Locations Administered by Parks Canada.

2 Thompson Economic Consulting Services (1989). Visitor Profile and Economic Impact Statement of Northern National Parks (Reserves) and Historic Sites. Prepared for Socio-Economic Branch Canadian Parks Service, Ottawa.

Section 3.0 contains a description of a methodology that can be used to assess the relationship between Canadian Parks Service expenditures and investment in the private sector. A rationale for this methodology is provided, along with a listing of relevant data sources.

In Section 4.0, the recommended methodology is used to quantify the economic impacts resulting from induced private-sector investment in the 1988/89 fiscal year arising from the mix of goods and services purchased by the Canadian Parks Service. This analysis is based on records of expenditures provided by the Canadian Parks Service and employs impact coefficients derived from the Input-Output Model of the Canadian economy in 1979, as developed by Statistics Canada.

The final section of this report, Section 5.0, provides a summary of findings about the nature of economic impacts attributable to private-sector investment induced by Canadian Parks Service spending. A critical evaluation of the impact assessment methodology is also provided along with recommendations for future use and refinement of this approach.

2.0 LITERATURE REVIEW

Recently, a number of models have been developed to assess the relationship between private-sector investment and spending by visitors to various parks, recreation sites and tourist attractions. These models and methods are of interest to this study for two reasons. First, it may be possible that, with modification, some of these may also be suitable for determining the relationship between investment and spending by the Canadian Parks Service. Second, analysis of these methods will identify the main evaluation issues that will have to be addressed if a new methodology is required. Some of these studies are reviewed below.

2.1 Tourism Impact Model

The Tourism Impact Model (TIM) represents the first instance in which the relationship between visitor spending and private-sector investment was examined and was developed in 1975 by the Bureau of Management Consulting, a branch of Supply and Services Canada, for the Canadian Government Office of Tourism and the Nova Scotia Department of Tourism. The purpose of TIM was to develop a model which could be used to predict, in quantitative terms, tourism expenditures and the resulting economic impacts associated proposals for new tourism-related projects and policies.[3]

The Tourism Impact Model consists of two modules and was designed to run in conjunction with the Tourism Expenditure Model (TEM). TEM is a separate model that provides estimates of tourist expenditures in three major economic sectors:

- accommodation, meals and beverages;
- transportation; and,
- recreation, entertainment and other items.

The first module of the TIM generates estimates of the induced private-sector investment resulting from tourist expenditures. In the second module, these estimates of expenditures on investment are combined with the estimates of tourist spending and massaged using an input-output of the national or regional economies to produce estimates of economic impacts.

The rationale for the first module is that capital investment is an impact of tourist spending and this investment, in turn, generates economic impacts in the remainder of the economy. Estimation of this induced investment involves two steps. The first step employs regression analysis and economic theory to link together various economic time series data with total investment in each of the three economic sectors. Total sectoral investment in one year is considered to be a function of:

- total sales in that sector in the preceding year. This data was taken from various sources, including Statistics Canada, which relate to the three economic sectors identified above. For some sectors, this information was incomplete or inadequate;

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3 Bureau of Management Consulting (1975). Tourism Impact Model. Project 5·1258. Prepared for the Canadian Government Office of Tourism.

- interest rate in the preceding year. This was the chartered bank prime business loan rate and was taken from the Bank of Canada Review; and,

- an investment accelerator factor which considers the rate of change in investment between the base year and the preceding year.

Data on investment in each sectoral was based on the total value of new and repair construction and was taken from Statistics Canada Catalogue 64-201, Construction in Canada. Regression analysis is then used to identify the historical relationship among these variables and generates an equation that will enable estimation of investment in future years, given a change in any of the three exogenous variables.

The second step estimates the extent of sectoral investment related to tourism spending. Within each sector, tourism-induced investment is difficult to differentiate from other sources of induced investment. To make this differentiation, the model prorates the estimate of total sectoral investment according to the percentage of total sectoral sales generated by tourist spending:

$$\text{Tourism-Induced Investment} = \frac{\text{Tourist Sales}}{\text{Total Sales}} * \text{Total Sectoral Investment}$$

The resulting estimate of tourism-induced investment is then combined with the original estimates of tourist spending, disaggregated according to Standard Industrial Classification (SIC) codes and incorporated into an input-output model to determine the economic impacts of tourist spending.

The main strength of the model is that it recognizes that investment in one time period reflects the economic conditions in preceding time periods. Weaknesses of the model are that estimation of the proportion of total sectoral investment related to tourism may not be accurate and that available data sources do not adequately address non-construction investment, land purchase costs, or the value of existing capital stock. In addition, it is difficult to derive accurate estimates of total sales for some sectors.

For assessing the extent of investment induced by purchases of the Canadian Parks Service, both steps in the TIM may be useful. The first step, which provides a mechanism for predicting future levels of investment, will not be required if historical data is to be analyzed, but may be useful if future investment impacts are to be estimated for purchases in the current year. The second step, which estimates how much investment can be attributed to a particular segment of sectoral sales in the preceding year, can then be used to analyze historical sales data to project the investment impacts of current expenditure patterns by the Canadian Parks Service.

One difficulty with using a model like TIM is that, instead of dealing with expenditures in three sectors of the economy, the Canadian Parks Service purchases goods and services from nearly all sectors, so that the data requirements would be significantly greater and the calculations would be much more complex. In addition, Canadian Parks Service purchases tend to be seasonal so that an estimate of investment impacts based on the annual proportion of total sales may tend to be biased.

2.2 Sault Ste. Marie Canal

In 1989, P.G. Whiting and Associates, working on behalf of the Canadian Parks Service, Ontario Region, addressed the question of induced investment resulting from the Sault Ste. Marie canal and the impacts that this investment has had upon the economy of Sault Ste. Marie.

In the resulting report, two sources of indirect and induced private investment were identified[4]:

1. a major capital investment by one organization leading to investment opportunities for other organizations (e.g., construction of a hotel creates opportunities for investments in other facilities and services such as restaurants, vehicle services, retail, etc); and,

2. the long term injection of tourist and other spending in an area which can generate investment in supporting and complementary services and facilities (e.g., spending by tourists in the Sault Ste. Marie area over time induces the development of facilities and services to accommodate tourists).

To quantify these investments and their economic impacts, three approaches were employed. The Business Investment Decision approach employed informal interviews with companies which had recently made investments in the local tourism sector to identify the extent to which their decision could be attributed to the canal. Survey responses showed that, for some businesses, the canal had no effect whatsoever on the decision to invest. For other businesses, the canal was recognized to have had some influence on their decision to invest, but the extent of this influence would not be quantified. Based on this analysis, the effect of the canal on investment was determined to be not of great importance .

Total Commercial Construction Analysis was the second approach used to assess potential induced investment generated by the canal. This approach used building permit information to determine the extent of new commercial construction during the previous four years and, based on assumptions about the amount of time spent in the region by visitors to canal, a portion of this new construction was attributed to the presence of the canal. While the building permit data were readily available, it was very difficult to decide what portion of new construction was canal-related. Nevertheless, this method also showed that the impacts of the canal on induced investment were not of great importance.

A third approach, Comparative Approach, involved the identification and review of other studies which attempted to identify the extent of induced investment associated with park or recreation resources. A literature search was carried out in all provinces and territories, but no useful comparable research was available. Consequently, this approach yielded no useful information.

4 P.G. Whiting and Associates (1989). Sault Ste. Marie Canal: Socio-Economic Impact Evaluation, Appendix 5 - Indirect and Induced Investment Effects of the Sault Ste. Marie Canal. Prepared for Canadian Parks Service, Ontario Region. Page 1.

While two of the three approaches appeared to work, albeit with limited success, it is doubtful whether they could be used to evaluate the impacts of spending by the Canadian Parks Service. To implement the Business Investment Decision approach would require a survey of a random sample of businesses from which goods and services are purchased and, given the number and diversity of such firms, such a survey would be very expensive and difficult to implement. In addition, as most of these businesses supply goods and services to a myriad of other customers, it would be impossible for them to isolate the impacts results just from purchases by the Canadian Parks Service.

The Total Commercial Construction Analysis, holds some potential for use as an evaluation method, due to the existence of reliable, cross-Canada information on commercial construction. However, some alternate method for assigning the portion of construction attributable to Canadian Parks Service expenditures will have to be developed if this approach is to be utilized.

2.3 Niagara Falls Impact Study

This study consisted of a regional tourism impact study for the City of Niagara Falls and was conducted during 1987 with funding from the Department of Regional Industrial Expansion, the City of Niagara Falls and the Niagara Falls, Canada Visitor and Convention Bureau.[5] There were two different purposes for completing this project . For the City of Niagara Falls, the main purpose was to measure the economic impacts of tourism and then develop a strategy for tourism marketing, tourism development and tourism policy. For the Department of Regional Industrial Expansion, the purpose of the study was to develop and apply a regional tourism economic impact model.

The tourism impact model developed for this project examined impacts in terms of both the demand for and supply of goods and services to tourists. The demand side was accomplished by undertaking a visitor exist survey to collect basic data about their visit and expenditures. When it was determined that existing information sources would be inadequate to assess the supply side of the tourism market, surveys were conducted with a representative sample of businesses in all aspects of the regional tourism industry.

Although the economic impacts resulting from private-sector induced expenditures resulting from the tourist trade were included in the final impact estimates, they were not explicitly addressed in the study. The estimation process involved:

- estimating total revenues based on visitor expenditures;
- estimating industry expenditure/purchase patterns using provincial norms as determined by Statistics Canada; and,

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5 Economic Planning Group of Canada (1988). Tourism Impact Development Initiative, Economic Impact Study, Niagara Falls. Prepared in conjunction with Econometric Research Limited and Ruston/Tomany & Associates Ltd. for Tourism Canada.

- calculating impacts according to the mix of goods and services purchased by the businesses and based on impact coefficients from the 1979 Statistics Canada input-output model of the Ontario economy.

In this way, the capital expenditures of businesses (i.e. investment by the private sector) were combined with the operating costs in order to arrive at total annual expenditures which then served as the basis for estimating impacts. If the capital expenditures had been examined separately, the economic impacts of private sector investment could have been quantified.

While this method for estimating the impacts of private-sector induced spending is acceptable for assessing the economic impacts of spending by tourists or park visitors, it cannot easily be used to assess the impacts arising from expenditures by the Canadian Parks Service. The main limitation to this approach is the same as noted for the Business Investment Approach described in Section 2.2.1: a survey of a random sample of suppliers of goods and services would have to be conducted, at considerable expense, and it is unlikely that they would be able to pinpoint the exact contribution of Canadian Parks Service spending in their decision to invest.

In addition, this approach assumes that the capital costs expended in that year are directly attributable to levels of visitation in that same year although, as noted earlier, there is usually a time lag between the realization of the need for more capacity and the timing of the investment. This may not be a problem for businesses whose main source of income comes from one source (i.e., tourists) and it is possible to forecast trends and make decisions based on continuation of these trends. However, for businesses which draw revenues from numerous clients (such as those servicing the Canadian Parks Service), it is not possible to make predictions about what each client will spend. For this reason, they will tend to react to changes in purchases, usually with a one or two year time lag.

2.4 B.C. Parks Impact Model

In 1984, Marvin Shaffer & Associates Ltd. developed an economic evaluation procedure for assessing provincial park investments in British Columbia. This project was undertaken for the Ministry of Lands, Parks and Housing in order to provide a rationale for justifying requests for additional land and financial resources to use available resources in the most efficient manner. This evaluation process included an assessment of economic efficiency (cost/benefit analysis) plus an economic impact assessment procedure for identifying the full range of impacts that would result from new investments.

Included as part of the economic impact assessment procedure is recognition of "direct complementary business expenditures and impacts". These are defined as businesses that "may start-up *(or expand)* as a result of the park investment or program."[6] Where these can be identified, detailed information on expenditures by Standard Industrial Classification and region of supply is required so that the resulting impacts can be estimated using appropriate coefficients from an input-output table or other source.

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6 Marvin Shaffer & Associates Ltd. (1984). Economic Evaluation for Provincial Park Investments. Prepared in conjunction with Reid Crowther & Partners Ltd. for B.C. Ministry of Lands, Parks and Housing. Page 60.

While this definition appears to include induced private-sector investment, the B.C. parks methodology contains no guidelines for identifying these investments or determining what proportion of them are directly attributable to the park proposal. Without such information, the B.C. Parks impact model is of little value for establishing the potential impacts resulting from private-sector investment induced by expenditures by the Canadian Parks Service.

2.5 Private-Sector Investment in Alberta National Parks

A study of private-sector investment in Banff, Jasper and Waterton national parks was conducted in 1989 by Thompson Economic Consulting Services on behalf of the Canadian Parks Service, Ottawa. This study estimated the extent to which park visitation had induced private-sector development (hotels, restaurants, other facilities) in each of the three mountain parks over five fiscal years. Residential and commercial building permits were used as the basis for estimating impacts and it was assumed that all new construction was park-induced private-sector development. This impacts of this investment were then estimated using coefficients from the Statistics Canada Input-Output Model of the Alberta economy based on 1979 data.

The main problem with this methodology is that, in any community, some new construction occurs each year and it is very difficult to differentiate normal growth from park-induced growth. To determine the extent of this problem, the value of building permits issued in each park was compared with corresponding building permit information for Alberta communities of a comparable size. This showed that, for the period in question, the park-induced component of private-sector development consisted of:

- 55 percent of residential construction and 90 percent of commercial construction activities in Banff National Park; and,
- 40 percent of commercial construction in Jasper National Park and Waterton National Park.[7]

The success of this methodology is based on the fact that, within Banff, Jasper and Waterton parks there are a limited number of operators, it is relatively easy to keep track of all new building activity, and the economic base of the community consists almost entirely of tourism. This means that it is relatively easy to assume that most new private-sector development is park-related.

Such a method would not be particularly suitable for assessing the private-sector investment that could be attributed to spending by the Canadian Parks Service. As noted for the other methods, the Canadian Parks Service purchases goods and services from a multitude of suppliers and it would be very difficult to differentiate the effects of their purchases from purchases made by other clients.

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7 Thompson Economic Consulting Services (1989). Private-Sector Construction in Banff, Jasper and Waterton National Parks in Alberta: Economic Impacts. Prepared for Canadian Parks Service, Ottawa.

2.6 Summary

A summary of some of the more important characteristics of the methodologies used to estimate the impacts of private-sector investment resulting tourism/park projects is provided below:

	Estimation of Induced Investment			Method for
	Source of Spending	Lagged Effects	Information Sources	Estimating Impacts
Tourism Impact Model	Tourists	Yes	Existing	I/O Tables
Sault Ste. Marie Canal	Businesses	No	Informal Interviews	I/O Tables
Niagara Falls Impact Study	Businesses	No	Survey	I/O Tables
B.C. Parks Impact Model	n.s.	n.s.	n.s.	I/O Tables
Private-Sector Investment in Alberta National Parks	Businesses	n.a.	Existing	I/O Tables

n.a. - not applicable n.s. - not specified

This summary shows that, while there was general agreement among studies in regard to the methodology for estimating impacts (input-output models), each study used a different method to produce estimates of the amount of private-sector investment that can be attributed to a particular source of expenditures. Two of the studies developed their estimates of private-sector investment on the basis of existing data sources while two others used surveys to collect this information. And only one of the methods estimated investment based on expenditures in a previous period of time; the remainder simply examined capital expenditure data without regard to what factors induced these expenditures.

In general, it can be concluded that the issue of induced private-sector investment has not been well addressed by previous studies. Only the Tourism Impact Model employs a systematic methodology which uses economic theory to examine the relationship between a particular source of expenditures and subsequent private-sector investment. The remainder of the methods merely examine the effects of capital spending in a given year by a limited number of businesses and make assumptions about the portion of this spending that can be attributed to a particular source. For this reason, it is recommended that the methodology contained in the Tourism Impact Model, with some modifications, be used to estimate the extent of private-sector investment induced by the expenditures of the Canadian Parks Service.

3.0 ASSESSMENT METHODOLOGY

Having determined that an evaluation methodology based on the estimation process used in the Tourism Impact Model is appropriate, it is now necessary to adapt and fine-tune this process for use in assessing the extent of private-sector investment attributable to expenditures by the Canadian Parks Service. This adaptation must reflect that:

- expenditures by the Canadian Parks Service come from more than just the three sectors identified for tourist expenditures;
- impact estimates are required for all the provinces and territories as well as for Canada;
- since 1975, when the Tourism Impact Model was designed, many more sources of data about industry revenues and investment now exist; and,
- an estimate of the impacts on private-sector investment in fiscal year 1988/89 attributable to Canadian Parks Service expenditures is ultimately required.

Each of these issues and a full description of the proposed assessment methodology are addressed below.

3.1 General Description

The proposed assessment methodology consists of three basic tasks, from gathering of information through to the estimation of economic impacts for individual provinces. In cases where future investment impacts need to be estimated, one additional step is required. Details of each step are provided below.

3.1.1 Information Collection

The first task in the assessment methodology will be to collect all the information required for the analysis. The basic information requirements of the TIM model include data on total sales and investment in each sector of the economy that may be affected by Canadian Parks Service spending, plus details of Canadian Parks Service spending. Additional information on interest rates may also be required if future levels of sectoral investment are required - see Section 3.1.4.

Very detailed estimates of expenditures can be provided by the Canadian Parks Service, in the form of Line Object Summaries. Examination of these summaries suggests that the Canadian Parks Service purchases items from about half of the 43 industrial classifications listed for the national and provincial economies may be affected.

Information on sectoral sales and investment across Canada is available only from Statistics Canada. However, as discussed in Section 3.2, this information cannot support detailed analysis on a sectoral basis and so some aggregation of sectoral information will be required. These data limitations will determine how complex and detailed the resulting assessment methodology can be.

3.1.2 Estimation of CPS-Induced Investment

Once all the available information has been collected, the second task in the methodology will be to determine what proportion of total investment in each economic sector can be attributed to spending by the Canadian Parks Service.

According to the Tourism Impact Model, investment involves an expansion of plant or facilities that will undistinguishably serve both the Canadian Parks Service and other clients. For this reason it is necessary to first estimate how much total sectoral spending can be attributed to the Canadian Parks Service, and then apply this percentage to total sectoral investment.

To make this determination for expenditures by the Canadian Parks Service, TIM would use the following equation:

$$ICPS_t = SCPS/S * I_t$$

Where: ICPS is the proportion of total sectoral investment in period t that can be attributed to the Canadian Parks Service
I is investment in period t
S is the value of sales
SCPS is the value of purchases by the Canadian Parks Service

According to TIM, the ratio of CPS sales to total sectoral sales (SCPS/S) should be calculated on the basis of several years of historical data. However, it must be noted that TIM was developed as a predictive model which uses time series data to prepare short term forecasts of future investment based on current levels of sales.

If the extent of total sectoral investment in a particular year is known, then the ratio of CPS sales to total sectoral sales should be calculated as SCPS/S for the previous year. In this way, the temporal relationship between sales and the decision to invest will be maintained, but will be based on actual data which reflect real economic conditions rather than historical trends which tend to ignore short-term variations.

3.1.3 Estimation of Economic Impacts

The third task in the methodology will involve estimating the impacts attributable to the value of private-sector investment that has been attributed to the purchase of goods and services by the Canadian Parks Service. Impacts will be calculated for each economic sector using multiplier coefficients from the 1979 version of the Statistics Canada model of the Canadian and provincial economies. Total impacts will be estimated using the total multiplier coefficients for non-residential construction (Tables I.B.1 to I.B.3), while the direct portion of total impacts will be determined using employment and income multipliers for the construction industry (Tables II.C.1 to II.C.3). Impacts will be measured in terms of changes in labour income, employment and Gross Domestic Product (GDP).

3.1.4 Investment Forecasts (Optional Step)

If impacts on future levels of investment are to be estimated based on Canadian Parks Service expenditures in the current year, one additional step in the assessment methodology will be required. As future levels of investment are unknown, it will therefore be necessary to develop forecasts of sectoral investment in each province. To make such forecasts, TIM suggests the following estimation procedure:

$$I_t = a\ S_{t-1} - b\ R_{t-1} + c\ C_{t-1}$$

Where: I is investment in period t
S is the value of sales in period t-1
R is the rate of interest in period t-1
C is the total investment accelerator which is calculated as:

$$C_t = (I_t - I_{t-1})/\ I_{t-1}$$

The outcome of this task will be a series of equations that can be used to predict total investment for each group of economic sectors in each province (including the Yukon/NWT) and for Canada. By using these forecasts of total sectoral investment in concert with the other three steps of the assessment methodology, predictions of the potential impacts of current expenditures on future private-sector investment can be prepared.

The proposed model appears to work quite well. Based on available information on sales and investment for five major sectors in each province and territory over the period from 1983 to 1988, 34 of 66 equations had correlation coefficients (R^2) in excess of 0.9. Another 13 equations had coefficients between 0.8 and 0.9 and only eight equations had correlation coefficients of less than 0.6. At a national level, the results show that the value of investment in one year is equal to about $0.12 for every of dollar of sales in the previous year.

3.2 Available Information Sources

One factor limiting the use of this approach is the availability of information. In assessing the Tourism Impact Model, which considered the effects of tourist spending in only three sectors of the economy, it was determined that the model was limited by the degree of commodity disaggregation in the input-output model.

In comparison, the Canadian Parks Service purchases goods and services from about half of the 92 commodity classes used in the current input-output model. This means that much more data on sales and investment for each of these sectors or commodity classes will be required than for the Tourism Impact Model. As not all this information is available on a provincial and a national basis, it will be necessary to aggregate commodity classes to reflect what data can be obtained. The availability of sales and investment data is examined below to determine the extent to which aggregation of commodity classes will be required.

3.2.1 Sales Data

Statistics regarding the annual value of the sales of goods and services for 36 major industrial groups are available from Statistics Canada for Canada as a whole for each year including 1988.[8] These groups are identified in Table 1.

One limitation of this data is that, aside from data on mining, there is no sales information for any other primary industries. Another problem is that there are no corresponding data for the provinces. To get provincial estimates, it may be possible to prorate this national total according to the value of production from each province as determined in 1979; this data is normally included as part of the input-output analysis. This approach would require an assumption that the distribution of production capacity and output has remained constant over time, and it is unlikely that this has occurred.

Alternatively, Statistics Canada does produce information on the value of sales for the manufacturing industries in each province. Unfortunately, the most recent data is for 1986 and there is no information for the service industries. A comparison of this data with the information on industrial corporations also shows that the estimates of the value of sales are slightly different.

On balance, the first alternative would appear to provide more comprehensive and recent data and is therefore recommended.

3.2.2 Investment Data

Information on total investment by the private sector is much more limited. Provincial data are available for each year to 1988, but information is only available for four general economic sectors (see Table 1), although investment data for the construction industry is also available for Ontario, Quebec and British Columbia.[9] Some differentiation between public and private sector is also provided.

The main limitation of this data is that it reports expected investment actions by companies in each sector in the most recent year of publication. However, historical data is updated each year to reflect actual investment so that investment estimates for the period up to 1987 are more accurate than for more recent years.

3.2.3 Canadian Parks Service Expenditures

Detailed accounts of Canadian Parks Service expenditures are available in the form of Line Object Summaries which are generated for each national heritage site. The Line Object Summaries contain hundreds of categories which can be aggregated into the standard commodity codes and industrial classifications used in the input-output tables.

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8 See Industrial Corporations, Statistics Canada Catalogue 61-003.

9 See Private and Public Investment in Canada: Intentions, Statistics Canada Catalogue 61-205.

It should be added that not all of the expenditures identified for each national heritage site occur in the province or territory in which that site is located. To provide the most accurate provincial expenditure data, it will be necessary to determine how total expenditures are distributed geographically and this will have to be provided by staff at each national historic site, with separate estimates done for the capital and operating components of the overall budget.

3.2.4 Discussion

According to this review of available data sources, the main limiting factor for using the assessment methodology will be the lack of data related to investment. At a provincial level, the lack of investment data for individual sectors means that all data on total sectoral sales and Canadian Parks Service expenditures will have to be grouped into the five general categories (primary industries, construction, manufacturing, utilities and commercial) for which data is available or can be interpolated. The procedure for aggregating this data will be as follows:

1. The Canadian Parks Service Line Object Summary Codes will be aggregated into the standard commodity codes used in the input-output tables using the process developed as part of a recent study of the impact of Canadian Parks Service expenditures for parks (reserves) and historic sites in northern Canada. A listing of the Line Object Summary codes which comprise each of the standard commodity codes is provided in Appendix A of this report.

2. The Canadian Parks Service expenditure data will be further aggregated into the standard industrial classifications. A listing of the commodity codes which comprise each of the industry classifications is summarized in Appendix B.

3. The Canadian Parks Service expenditure data will then be reduced into the 36 categories for which sectoral sales information is available.

4. Data on total sectoral sales and Canadian Parks Service expenditures will then be aggregated into the five classifications for which investment data is available.

A graphical description of steps 2 through 4 is presented in Table 1. Once the all the data has been reduced to the five general industry classifications, the relationship between investment and sales, the role of Canadian Parks Service expenditures and the impact of these expenditures will then be estimated for each one.

3.3 Problems and Limitations

As originally developed, the Tourism Impact Model had a number of problems and limitations. One of these problems was that building permit data was used as the source of information on public-sector investment and consequently did not consider either the purchase of machinery and equipments or the value of land purchases.

Table 1

SUGGESTED APPROACH FOR AGGREGATION OF AVAILABLE DATA SOURCES

Investment Data	Sales Data	Statistics Canada Industry Classifications	
Primary Industries		1	Agriculture
		2	Forestry
		3	Fishing, Hunting & Trapping
	Metal Mines	4	Metal Mines
	Mineral Fuels	5	Mineral Fuels
	Other Mining	6	Non-Metal Mines & Quarries
		7	Services Incidental to Mining
Construction	Construction	28	Construction Industry
Manufacturing	Food	8	Food & Beverage Industries
	Soft Drink		
	Brewing		
	Distilling		
	Tobacco Products	9	Tobacco Products Industries
	Rubber	10	Rubber & Plastics Products Industries
	Leather	11	Leather Industries
	Textiles	12	Textile Industries
		13	Knitting Mills
	Clothing	14	Clothing Industries
	Wood	15	Wood Industries
	Furniture	16	Furniture & Fixture Industries
	Paper & Allied	17	Paper & Allied Industries
	Printing/Publishing	18	Printing & Publishing
	Primary Metal	19	Primary Metal Industries
	Metal Fabricating	20	Metal Fabricating Industries
	Machinery	21	Machinery Industries
	Transportation Equip.	22	Transportation Equipment Industries
	Electrical Products	23	Electrical Products Industries
	Non-Metallic Minerals	24	Non-Metallic Mineral Products Industries
	Petroleum & Coal	25	Petroleum & Coal Products
	Chemical Products	26	Chemical & Chemical Products Industries
	Other Manufacturing	27	Miscellaneous Manufacturing Industries
Utilities	Transportation	29	Transportation & Storage
	Storage		
		30	Communication
	Pipelines	31	Electric Power, Gas, Other Utilities
	Gas Distribution		
Commercial	Wholesale Trade	32	Wholesale trade
	Retail Trade	33	Retail trade
	Real Estate	34	Owner Occupied Dwellings
		35	Other Finance, Insurance, Real Estate
	Hotel & Restaurant	39	Accommodation & Food Services
	Services to Businesses	38	Services to Business Management
	Other Services	36	Education & Health Services
		37	Amusement & Recreation Services
		40	Other Personal & Miscellaneous Services

While the data on investment do differentiate between the value of construction and the value of purchases of machinery and equipment, lack of knowledge about the types of machinery and equipment purchased makes selection of appropriate multiplier coefficients impossible. Thus, all investments are considered as some form of construction. In addition, there is no information about the land component of private-sector investment. Therefore, the approach will tend to slightly underestimate the overall impact of expenditures by the Canadian Parks Service.

While the proposed assessment methodology will work at a provincial or national level, it cannot be used to estimate regional impacts because data on investment and sales are not collected on a regional basis. For regional analysis, building permit data may be a more reliable source of information on investment, but it must be realized that building permits reflect construction costs and may not include equipment purchases.

Another problem noted for the Tourism Impact Model was that total private-sector investment could not readily be differentiated between one source of expenditures (tourists) or another. While an estimate of this component is included as part of the model, the accuracy of this estimate is not known.

This problem may tend to be more significant in the case of expenditures by the Canadian Parks Services because these purchases tend to be seasonal. On one hand, high demand in one season could stress the capacity of existing production so that most expansion of capacity or investment could be attributed to the source of that seasonal demand. On the other hand, if seasonal demands account for a very small portion of total annual sales, such purchases may have a very minor influence on investment decisions. Without additional information, it will simply have to be assumed that the proportion of total investment induced by one particular source of expenditures is equivalent to the proportion of total sectoral sales accounted for by that source of expenditures.

One additional problem is that there are some inconsistencies in sales and investment information for some sectors. For primary industries, for example, the value of investment appears to exceed the value of sales and this is due to due the fact that sales data are only available for the mining industry, and not other primary industries. While this could pose a significant estimation problem, the value of Canadian Parks Services purchases from the primary sector is very small.

4.0 ESTIMATED ECONOMIC IMPACTS OF INDUCED INVESTMENTS RESULTING FROM THE PURCHASES OF GOODS AND SERVICES BY THE CANADIAN PARKS SERVICE

The second major objective of this project is to estimate, using the proposed estimation methodology, the extent of private-sector investment in 1988/89 that can be attributed to spending of the Canadian Parks Service. According to the recommended evaluation approach, decisions regarding investment are largely dependent on the extent of total sales in the previous year, so sales data for the 1987/88 fiscal year must be examined.

As noted earlier, the proposed assessment methodology is comprised of three steps, each of which are detailed below. Since data on actual private-sector investment in Canada are available for 1988, the additional step of predicting levels of investment in the target year is not required.

4.1 Information Collection

To undertake the analysis, data is required regarding expenditures by the Canadian Parks Service in 1987/88, the total value of sales in the various economic sectors in 1987/88 and the amount of private-sector investment in 1988/89. Unfortunately, sectoral sales and investment data are only available on a calendar year basis, so calendar year information has been used as a proxy for fiscal year information.

4.1.1 Purchases of Goods and Services

According to an analysis of budget information (Line Object Summaries) for the Canadian Parks Service for fiscal year 1987/88, total purchases of goods and services totalled $118.3 million from a total budget of $301.7 million. As detailed in Table 2, this amount excludes payments to labour, either through capital or operating budgets, and also excludes transfer payments, which cannot be attributed to any particular industry.[10]

Table 3 provides estimates of Canadian Parks Service spending in each province and from each major industrial sector for 1987/88. This table was derived using the data aggregation procedure described in Section 3.2.4. and is used as the basis for establishing the extent of Canadian Parks Service spending on private-sector investment.

4.1.2 Total Sectoral Sales

Table 4 provides estimates of the value of total sales in 1987 by each of the five major industrial sectors on a province by province basis. These estimates are based on detailed national data produced by Statistics Canada and have been converted to provincial estimates for the five major economic sectors using the procedure identified in Appendix D.

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10 Details of those budget items which have been classified as transfer payments are provided in Appendix A.

Table 2

DETAILS OF TOTAL EXPENDITURES MADE BY THE CANADIAN PARKS SERVICE IN 1987/88
(Thousands of Dollars)

Type of Expenditure	Park Headquarters	Atlantic Region	Quebec Region	Ontario Region	Prairie Region	Western Region	TOTAL
Wages & Salaries	22,675.5	28,220.5	18,775.0	25,313.7	20,989.1	42,525.7	158,499.6
Goods & Services	17,468.9	17,185.8	16,380.4	16,451.2	18,084.1	32,760.1	118,330.5
Transfer Payments	17,542.1	2,571.9	117.4	637.0	3,642.9	371.9	24,883.2
Total	57,686.5	47,978.2	35,272.8	42,401.9	42,716.1	75,657.7	301,713.3

Source: Aggregation of the detailed Line Object Summary information provided by the Canadian Parks Service.

Table 3

ESTIMATED VALUE OF PURCHASES OF GOODS AND SERVICES, BY INDUSTRIAL SECTOR AND PROVINCE, MADE BY THE CANADIAN PARKS SERVICE IN 1987/88
(Thousands of Dollars)

	Primary Industries	Construction	Manufacturing Industries	Utilities	Commercial	TOTAL
Newfoundland	40.5	588.3	795.3	287.5	1,003.8	2,715.4
P.E.I.	17.7	256.9	347.3	125.6	438.4	1,185.8
Nova Scotia	165.8	2,405.2	3,251.5	1,175.5	4,104.0	11,102.1
New Brunswick	32.6	472.9	639.2	231.1	806.8	2,182.6
Quebec	160.2	5,879.9	7,230.5	1,997.1	9,847.1	25,114.8
Ontario	93.9	4,316.9	8,449.2	2,002.9	10,322.7	25,185.6
Manitoba	66.9	1,351.8	2,240.1	1,355.4	2,526.8	7,541.0
Saskatchewan	39.5	797.5	1,321.5	799.6	1,490.6	4,448.7
Alberta	484.6	8,111.1	7,540.6	2,270.5	7,047.8	25,454.6
British Columbia	139.1	2,327.9	2,164.2	651.6	2,022.7	7,305.5
Yukon & NWT	54.1	1,092.5	1,810.4	1,095.4	2,042.0	6,094.3
Canada	1,294.8	27,600.9	35,789.7	11,992.2	41,652.8	118,330.5

In reviewing Table 4, it should be noted that sales data for some sectors, notably primary industries, are incomplete because not all industries are represented in the sectoral sales estimates. An example of this problem is that Table 6 shows no reported sales for primary industries in Prince Edward Island; sales data for primary industries includes only mining and related industries. The lack of complete sales data for primary industries is not considered to be a major problem, however, because, based on Table 3, sales from primary industries only accounted for about 1.1 percent of all purchases of goods and services by the Canadian Parks Service.

4.1.3 Sectoral Investment

Estimates of the extent of total private-sector investment that occurred in each province by sector during 1988 are provided in Table 5. While these data are based on information from Statistics Canada, some modifications were required to distinguish private-sector investment from public sector investment and to interpolate data to provide provincial estimates of investment by the construction industry. These modifications are explained in Appendix E.

It should be noted that, for the utilities sector, both public and private sector investment have been included. In reviewing the spending information for the Canadian Parks Service, it was impossible to differentiate spending between public and private utilities and, in order to show the full effect on induced investment, it was decided to treat public and private utilities as a single sector.

4.2 Estimation of CPS-Induced Investment

Following the assessment methodology described in Section 3.1.2, estimation of the amount of total investment in 1988 that could be attributed to spending by the Canadian Parks Service in 1987 required two calculations.

First, the proportion of total sectoral sales that could be attributed to the Canadian Parks Service was estimated by comparing the data in tables 3 and 4. The results of these calculations showed that, on a national basis, the $118.3 million spent by the Canadian Parks Service during 1987/88 represented only one hundredth of one percent of the $840.0 billion in national sales reported for 1987. Actual estimates of the Canadian Parks Service contribution to total sales for the five major sectors were as follows:

Economic Sector	Contribution to Sectoral Sales
Primary Industry	0.00385 Percent
Construction	0.04676 Percent
Manufacturing	0.01191 Percent
Utilities	0.02010 Percent
Commercial	0.01076 Percent
Total	0.01409 Percent

Similar calculations were made for each of the provinces.

Table 4

ESTIMATED VALUE OF TOTAL SALES, BY ECONOMIC SECTOR AND PROVINCE, 1987
(Millions of Dollars)

	Primary Industries	Construction	Manufacturing Industries	Utilities	Commercial	TOTAL
Newfoundland	1,363.1	1,178.3	1,976.1	872.4	4,550.7	9,940.6
P.E.I.	0.0	249.1	418.1	190.7	1,130.8	1,988.7
Nova Scotia	160.6	1,488.1	6,144.1	1,708.2	8,741.2	18,242.2
New Brunswick	369.0	1,459.8	6,112.2	1,607.6	8,118.3	17,666.9
Quebec	2,417.0	12,551.0	78,299.7	12,436.6	89,186.1	194,890.4
Ontario	3,060.8	16,090.1	149,422.2	21,606.2	154,692.8	344,872.1
Manitoba	617.2	2,018.7	8,223.3	3,480.5	14,537.9	28,877.6
Saskatchewan	2,581.6	2,856.3	3,558.6	2,298.5	12,774,1	24,069.1
Alberta	18,772.1	12,703.2	17,217.2	7,008.4	46,700.8	102,401.7
British Columbia	3,474.9	7,684.1	29,021.6	8,079.1	46,012.8	94,272.5
Yukon & NWT	821.6	743.4	46.9	385.9	760.5	2,758.3
Canada	33,637.9	59,022.1	300,440.0	59,674.1	387,206.0	839,980.1

Source: Estimated From Statistics Canada, Catalogue 61-205, Private and Public Investment in Canada. Provincial estimates were calculated according to the percentage of national production from each province as determined in the 1979 input-output model of the Canadian economy. See Appendix D.

Table 5

ESTIMATED VALUE OF TOTAL INVESTMENT, BY ECONOMIC SECTOR AND PROVINCE, 1988
(Millions of Dollars)

	Primary Industries	Construction	Manufacturing Industries	Utilities	Commercial	TOTAL
Newfoundland	502.2	198.8	348.7	285.3	129.8	1,464.8
P.E.I.	1,490.8	21.2	31.7	23.3	72.8	1,639.8
Nova Scotia	697.1	212.6	475.3	539.4	1,223.3	3,147.7
New Brunswick	240.1	83.8	748.7	421.5	373.4	1,867.5
Quebec	955.4	648.1	7,619.1	5,964.7	3,253.1	18,440.4
Ontario	2,158.1	1,140.6	15,211.5	10,290.3	14,976.4	43,776.9
Manitoba	532.9	234.2	354.8	1,431.4	520.0	3,073.3
Saskatchewan	1,333.0	635.3	505.0	978.6	458.1	3,910.0
Alberta	7,353.9	2,676.0	854.3	2,922.5	2,571.7	16,378.4
British Columbia	2,379.3	335.3	1,970.0	2,921.0	3,499.9	11,105.5
Yukon & NWT	972.2	648.3	7.5	87.7	39.7	1,755.4
Canada	18,615.0	6,834.2	28,126.6	25,865.7	27,118.2	106,559.7

Source: Statistics Canada, Catalogue 61-205, Private and Public Investment in Canada

The second calculation consisted of applying these percentages to the value of total investment, as summarized in Table 5, in order to estimate the extent of investment induced through spending by the Canadian Parks Service in 1988. While the percentages are extremely low, the total value of investment in Canada during the year was very large (about $106.6 billion). In combination, these factors suggest that the amount of investment in 1988 that can be attributed to expenditures by the Canadian Parks Service during the preceding year amounted to about $15.0 million.

A summary of provincial estimates of the amount of investment that can be attributed to expenditures by the Canadian Parks Service is provided in Table 6. These provincial estimates are less accurate than the national totals, due to the way in which sectoral sales data were interpolated, and tend to overstate impacts. However, the data indicate that the investment impacts accredited to the Canadian Parks Service were greatest in Alberta (22 percent of the total), Ontario (20 percent), Quebec (15 percent), Nova Scotia (14 percent) and the Yukon and NWT (10 percent). For all other provinces, the amount of investment induced by the Canadian Parks Service was less than $1.0 million and, in the case of Prince Edward Island, was less than $0.1 million.

4.3 Estimation of Economic Impacts

The final step in the analysis was to determine the extent to which investment induced by Canadian Park Service expenditures affected Gross Domestic Product (GDP), labour income and employment in each of the sectors and provinces. These estimates were prepared using multiplier coefficients for the non-residential construction industry as determined by the 1979 Input-Output model of the Canadian economy. In assessing impacts on employment, the 1979 multiplier coefficients were deflated by a factor of 1.78 to account for the effects of inflation between 1988 and 1979.[11]

Estimates of impacts on GDP, labour income and employment in each province are provided in tables 7, 8 and 9, respectively. It should be noted that the estimate of national impacts has been calculated independently from the provincial estimates and the resulting estimates are considered to be more accurate than the sum of the provincial totals. As noted earlier, estimates of sales data for individual provinces had to be interpolated from national statistics and this produced some inconsistencies with the data on the extent of investment in each province. The national data in tables 4 and 5 are reliable and consistent, so that estimation of impacts using this information produced more credible results than did using the sum of provincial impact estimates.

The economic impacts resulting from the estimated $15.0 million in investment induced by the Canadian Parks Service show that it accounted for approximately $13.1 million in GDP, $9.0 million in labour income and 245.6 person-years of employment.

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11 According to Statistics Canada, the national consumer price index for 1979 was 80.7 and reached 143.8 in 1988. This indicates that it would take about $1.78 in 1988 to purchase the same mix of goods and services that could have been purchased for one dollar in 1979.

Table 6

ESTIMATED VALUE OF INVESTMENT IN 1988/89 INDUCED BY PURCHASES OF GOODS AND SERVICES BY THE CANADIAN PARKS SERVICE IN 1987/88, BY ECONOMIC SECTOR AND PROVINCE

(Thousands of Dollars)

	Primary Industries	Construction	Manufacturing Industries	Utilities	Commercial	TOTAL
Newfoundland	14.9	99.3	140.3	94.0	28.6	377.1
P.E.I.	0.0	21.9	26.3	15.3	28.2	91.7
Nova Scotia	719.5	343.6	251.5	371.2	574.3	2,260.1
New Brunswick	21.2	27.1	78.3	60.6	37.1	224.3
Quebec	63.3	303.6	703.6	957.8	359.2	2,387.5
Ontario	66.2	306.0	860.1	953.9	999.4	3,185.6
Manitoba	57.8	156.8	96.7	557.4	90.4	959.1
Saskatchewan	20.4	177.4	187.5	340.4	53.5	779.2
Alberta	189.8	1,708.7	374.2	946.8	388.1	3,607.6
British Columbia	95.2	101.6	146.9	235.6	153.9	733.2
Yukon & NWT	64.0	952.7	289.5	248.9	106.6	1,661.7
Canada	716.5	3,195.9	3,550.7	5,198.0	2,917.2	15,011.4

* Provincial, sectoral and national totals have been calculated using the data in tables 3, 4 and 5, so that columns and rows do not necessarily add to the same totals. Due to the way in which sales and investment data have been produced, the national and sectoral estimates are considered to be more accurate than the provincial estimates.

Table 7

IMPACTS ON GROSS DOMESTIC PRODUCT RESULTING FROM INVESTMENT INDUCED BY CANADIAN PARKS SERVICE SPENDING, 1988

(Thousands of Dollars)

	Direct Impacts	Indirect/ Induced	Total Impacts
Newfoundland	153.9	169.3	323.2
P.E.I.	36.1	25.9	62.0
Nova Scotia	874.7	874.6	1,749.3
New Brunswick	90.0	75.5	165.5
Quebec	1,039.8	1,233.1	2,272.9
Ontario	1,417.5	1,943.3	3,360.8
Manitoba	378.7	356.0	734.7
Saskatchewan	309.7	265.4	575.1
Alberta	1,333.5	1,924.2	3,257.7
British Columbia	293.2	370.3	663.5
Yukon & NWT	535.7	489.6	1,025.3
Canada	5,963.4	7,131.0	13,094.4

As shown below, these estimates include direct impacts in the construction industry plus indirect and induced impacts in other sectors of the economy:

	Direct Impacts	Indirect/ Induced	Total Impacts
GDP	$5,963,000	$7,131,000	$13,094,400
Labour Income	$4,619,000	$4,397,200	$9,017,100
Employment (Person-Years)	102.7	142.9	245.6

According to the estimates, the greatest measure of impacts occurred in Ontario, even though the greatest amount of investment induced by the Canadian Parks Service occurred in Alberta. This difference is due to the fact that Ontario is more capable of producing all the goods and services required for construction and expansion of production capabilities so that the multiplier coefficients are greater than for Alberta.

Table 8

IMPACTS ON LABOUR INCOME RESULTING FROM INVESTMENT INDUCED BY CANADIAN PARKS SERVICE SPENDING, 1988
(Thousands of Dollars)

	Direct Impacts	Indirect/ Induced	Total Impacts
Newfoundland	118.7	106.4	225.1
P.E.I.	31.9	16.3	48.2
Nova Scotia	714.2	522.1	1,236.3
New Brunswick	78.3	45.1	123.4
Quebec	776.0	904.8	1,680.8
Ontario	1,103.7	1,221.8	2,325.5
Manitoba	302.3	215.6	517.9
Saskatchewan	241.0	159.5	400.5
Alberta	1,032.1	1,006.2	2,038.3
British Columbia	230.4	250.6	481.0
Yukon & NWT	377.9	316.7	694.6
Canada	4,619.9	4,397.2	9,017.1

Table 9

IMPACTS ON EMPLOYMENT RESULTING FROM INVESTMENT INDUCED BY CANADIAN PARKS SERVICE SPENDING, 1988
(Person-Years)

	Direct Impacts	Indirect/ Induced	Total Impacts
Newfoundland	3.2	3.3	6.5
P.E.I.	1.0	0.5	1.5
Nova Scotia	20.1	19.4	39.5
New Brunswick	1.8	1.7	3.5
Quebec	17.3	24.4	41.7
Ontario	25.0	40.5	65.5
Manitoba	8.4	8.0	16.4
Saskatchewan	4.8	4.9	9.7
Alberta	23.7	33.0	56.7
British Columbia	4.3	7.2	11.5
Yukon & NWT	1.8	12.0	13.8
Canada	102.7	142.9	245.6

5.0 SUMMARY AND EVALUATION

5.1 Summary of Results

During the 1987/88 fiscal year, the Canadian Parks Service purchased goods and services worth $118.3 million. According to information on national sales and investment for five major economic sectors, these purchases are estimated to have generated about $15.0 million in investment in the following year. This investment represents about 12.7 cents of every dollar in sales and is consistent with the historical relationship between sales and investment over the preceding four years.

While the majority of the $15.0 million in investment was undertaken by the private sector, the estimate includes some investment by public utilities. In turn, this $15.0 million in investment increased Canadian GDP by approximately $13.1 million, produced about $9.0 million in labour income and provided 245.6 person-years of employment.

5.2 Evaluation of the Assessment Methodology

There are a number of shortcomings associated with application of the proposed method for assessing the impacts of investment induced by expenditures of the Canadian Parks Service. However, these problems are primarily due to lack of complete and consistent data needed to drive the assessment method, rather than with the method itself.

One apparent problem is that, while Canadian Parks Service spending is based on a fiscal year ending in March, information on sectoral sales and investment is available only on a calendar basis. While this difference creates some inconsistencies, these are minor because the relationship between sales and investment is important in a relative rather than absolute sense and, based on a review of data for years prior to 1987, this relationship has remained fairly constant.

A more serious problem is that available data on sectoral sales does not include all relevant industries and provincial sales data do not exist. While a method of distributing national output among provinces was used to correct this problem, this method employed information that is 10 years old and unquestionably outdated. For this reason, the national and sectoral estimates of induced investment and resulting impacts are much more accurate than the provincial estimates. This problem is not likely to be easily remedied unless much more comprehensive and current data on the value of sales by industry by province is produced by Statistics Canada.

The only major problem with the assessment methodology itself is that it assumes that the amount of investment induced by spending by a particular segment of the market is directly proportional to the value of purchases for that market segment. While this assumption appears logical, questions about its validity were raised in the evaluation of the Tourism Impact Model and could not be resolved. For the Canadian Parks Services, this problem may tend to be more significant because purchases tend to be highly seasonal. However, without additional information and more research, the validity of this assumption will remain untested.

APPENDIX A

LINE OBJECT SUMMARY CODES AND CORRESPONDING COMMODITIES CODES

LINE OBJECT SUMMARY CODES AND CORRESPONDING COMMODITIES CODES

In order to determine the magnitude of the economic multipliers for expenditures by the Canadian Parks Service, it was necessary to identify the mix of commodities and services purchased by each park and historic site. The Line Object Summary Codes used for departmental accounting were considered suitable for this purpose, but the categories used in these summaries were not consistent with the classes of commodities used in the input-output tables produced by Statistics Canada. Thus, it was necessary to convert the Line Object Summary Codes to suitable commodity codes and a description of these conversions are provided in this appendix. These conversions were based on the Standard Industrial Code (SIC) definitions of Statistics Canada and were developed in association with Canadian Parks Service staff in Ottawa.

LINE OBJECT SUMMARY CODES AND CORRESPONDING COMMODITIES CODES

Line Object Summary		Commodity Classification	
Code	Description	Code	Description
0401	Travel Expenses	92	Travel/Advertising/Promotion
0402	Not Found	**	Transfer Payments
0405	Travel Advertising Rel	92	Travel/Advertising/Promotion
0406	Travel Public. Related	92	Travel/Advertising/Promotion
0407	Travel Exhib Related	92	Travel/Advertising/Promotion
0408	Travel Comm Training Rel	92	Travel/Advertising/Promotion
0420	Travel Advances	92	Travel/Advertising/Promotion
0421	Non Gov't Confs Canada	92	Travel/Advertising/Promotion
0423	Government Conferences	92	Travel/Advertising/Promotion
0424	Non-Gov't Conferences	92	Travel/Advertising/Promotion
0440	Travel Medical Evacuation	92	Travel/Advertising/Promotion
0441	Taxis HQ Area	92	Travel/Advertising/Promotion
0443	Travel Vacation Isol Post	92	Travel/Advertising/Promotion
0444	Travel Training	92	Travel/Advertising/Promotion
0450	Travel Non-Pub Servants	92	Travel/Advertising/Promotion
0498	Charges From Other Approp	**	Transfer Payments
0499	Recovery Incremental Cost	**	Transfer Payments
0560	removal Travel Costs	92	Travel/Advertising/Promotion
0566	Central Removal Services	92	Travel/Advertising/Promotion
0598	Charges From Other Approp	**	Transfer Payments
0601	Transportation Goods Air	74	Transportation & Storage
0651	Parcel Post	77	Postal Services
0652	Other Postal Service	77	Postal Services
0653	Courier Service	77	Postal Services
0654	Central Freight	77	Postal Services
0657	Transp Exhibitions Rel	74	Transportation & Storage
0698	Charges From Other Approp	**	Transfer Payments
0699	Recovery Incremental Cost	**	Transfer Payments
0701	Telephone Voice GTA	76	Telephone/Telegraph
0702	Tel Instal Repair Non GTA	76	Telephone/Telegraph
0703	Telephone LD Chgs Non GTA	76	Telephone/Telegraph
0704	Telephone Service Charges	76	Telephone/Telegraph
0705	Other Voice Serv Non GTA	76	Telephone/Telegraph
0798	Charges From Other Approp	**	Transfer Payments
0806	Message & Data Non GTA	76	Telephone/Telegraph
0809	Telex Service	76	Telephone/Telegraph
0810	Other Comm Serv	76	Telephone/Telegraph
0812	Facsimile Com Non GTA	76	Telephone/Telegraph
0813	Teletype Non-GTA	76	Telephone/Telegraph
0814	Message & Data G	76	Telephone/Telegraph
0898	Charges From Other Approp	**	Transfer Payments
0899	Recovery Incremental Cost	**	Transfer Payments
0901	Advertising Printed Outsd	84	Business Services
0902	Advertising Radio TV	84	Business Services
0903	Advertising Other Non Gov	84	Business Services
0904	Advertising DSS	84	Business Services
0905	Tender Calls	43	Printing/Publishing
0906	Audio Visual Services	84	Business Services
1040	Pub Broch Etc DSS	43	Printing/Publishing

LINE OBJECT SUMMARY CODES AND CORRESPONDING COMMODITIES CODES (cont'd)

Line Object Summary		Commodity Classification	
Code	Description	Code	Description
1043	Pub DSS Other Costs	43	Printing/Publishing
1044	Press Releases	43	Printing/Publishing
1050	Editing Serv Out	43	Printing/Publishing
1051	Publications Outside	43	Printing/Publishing
1054	Publications Other	43	Printing/Publishing
1055	Word Processing Outside	43	Printing/Publishing
1056	Design Services	43	Printing/Publishing
1060	Print Serv DESS	43	Printing/Publishing
1061	Scien. Tech Papers Dept	43	Printing/Publishing
1063	Competition Post	43	Printing/Publishing
1064	Other	43	Printing/Publishing
1070	Print Serv Outside Resl	43	Printing/Publishing
1073	Print Serv Outside Other	43	Printing/Publishing
1080	Exposition Ser DSS	43	Printing/Publishing
1081	Exposition Ser Outside	43	Printing/Publishing
1099	Recovery Incremental Cost	**	Transfer Payments
1101	Ac Serv Ex Audit	84	Business Services
1102	Acc Aud Serv DSS	84	Business Services
1105	Legal Serv	84	Business Services
1110	Design Pre-Des Consul	84	Business Services
1111	Surveys Consul	84	Business Services
1112	Drilling Serv	84	Business Services
1120	Engineer Consul	84	Business Services
1130	Engineer Serv Civil	84	Business Services
1131	Engineer Serv Mech	84	Business Services
1132	Engineer Elect Cons	84	Business Services
1140	Oth Engineer Serv	84	Business Services
1141	Engineering Serv	84	Business Services
1145	Draft Blue-Print	84	Business Services
1146	Architect Landscape	84	Business Services
1147	Architec Bldg	84	Business Services
1148	Arch Serv DPW	84	Business Services
1160	Sci Cons	84	Business Services
1170	Lab Test Analys	84	Business Services
1172	Weath Observ Ser	84	Business Services
1173	Ot Sci Serv Exc Cons	84	Business Services
1174	Natural Sciences	84	Business Services
1180	Mngt Cons Ex DSS	84	Business Services
1181	Mngt Cons Exc DSS	84	Business Services
1183	Rsrch Contracts	84	Business Services
1184	Ec Cons Adv Serv	84	Business Services
1185	Publications Consultant	84	Business Services
1186	Media Monitoring	84	Business Services
1190	EDP Consult Outside	84	Business Services
1191	EDP Consult Gov't	84	Business Services
1192	Telecom Consultants	84	Business Services
1193	Elect/Auto Office Consult	84	Business Services
1198	Charges From Other Approp	**	Transfer Payments

LINE OBJECT SUMMARY CODES AND CORRESPONDING COMMODITIES CODES (cont'd)

Line Object Summary		Commodity Classification	
Code	Description	Code	Description
1201	Educ Elem Sec Spc	85	Education Services
1202	Educ Univ Coll Cr	85	Education Services
1205	Adult Occup Tr Oth	85	Education Services
1206	Teach Instruc Cntrct	85	Education Services
1215	Lng Tr Cr Uni Coll	85	Education Services
1216	Lng Tr Prvt Instit	85	Education Services
1217	Purch Tr Pack Cr	85	Education Services
1220	Stf Dev Tr Psc Ex Lgtr	85	Education Services
1221	Tui Fees Univ&Colleg	85	Education Services
1222	TR PS Oth	85	Education Services
1225	Training Consult	85	Education Services
1226	Orientation Mgmt-Staff Comm	85	Education Services
1227	Communications Training	85	Education Services
1230	Health Serv	86	Health Services
1298	Charges From Other Approp	**	Transfer Payments
1300	Temporary Help Serv	89	Other Pers & Misc Services
1301	Cntrct Steno Typ	84	Business Services
1302	Cntrct Clerical	84	Business Services
1303	Oth Temp Help Serv	89	Other Pers & Misc Services
1401	Pers Serv Cont	89	Other Pers & Misc Services
1498	Charges From Other Approp	**	Transfer Payments
1499	Recovery Incremental Cost	**	Transfer Payments
1501	Laund Clean Rel Serv	89	Other Pers & Misc Services
1505	EDP Services DSS	89	Other Pers & Misc Services
1510	EDP Purch Soft	89	Other Pers & Misc Services
1515	Real Estate Serv	83	Other Fin, Insur, Real Estate
1516	Real Estate Serv DPW	83	Other Fin, Insur, Real Estate
1520	Film Oth Vis Mat	89	Other Pers & Misc Services
1525	Cntrct Admin DSS Serv Chg	84	Business Services
1530	Prod Dist Mot Pict	89	Other Pers & Misc Services
1531	Pro Dist Flm Str	89	Other Pers & Misc Services
1532	Processing Photo Services	89	Other Pers & Misc Services
1535	Graphic Serv	84	Business Services
1536	Other Photo Serv	89	Other Pers & Misc Services
1540	Inter-Intra Off Move	74	Transportation & Storage
1541	Catering	88	Accomm & Food Services
1543	Maint Serv Monum Plq	89	Other Pers & Misc Services
1547	Simult Interp Serv	84	Business Services
1548	Translation Serv	84	Business Services
1549	Fabrication Period Costum	69	Other Manufactured Products
1550	Fabric Uniforms	35	Clothing & Accessories
1551	Press Clip Serv	84	Business Services
1552	Elect Media Monit	84	Business Services
1553	Hon & Fees Adv Boards Comm	84	Business Services
1554	Brokerage Fees	83	Other Fin, Insur, Real Estate
1559	Storage Exhibits	74	Transportation & Storage
1560	Sto Warehous Ecx Dss	74	Transportation & Storage
1561	Warehouse Serv DSS	74	Transportation & Storage

LINE OBJECT SUMMARY CODES AND CORRESPONDING COMMODITIES CODES (cont'd)

Line Object Summary		Commodity Classification	
Code	Description	Code	Description
1565	Const Bldg Clean	89	Other Pers & Misc Services
1566	Garb Coll Exc Mun	79	Other Utilities
1568	Membership Fees - Comm	85	Education Services
1570	Hospitality Expenses	88	Accomm & Food Services
1571	Hospitality Adv	88	Accomm & Food Services
1574	Conference Fees	84	Business Services
1575	Membership Fees	84	Business Services
1576	Corps of Commissionaires	84	Business Services
1577	Other	84	Business Services
1579	Pub Rels Cons-Sp-Write	84	Business Services
1580	Purch Grnd Keep Serv	89	Other Pers & Misc Services
1581	Snow Ice Remov Serv	89	Other Pers & Misc Services
1584	Tenant Services DPW	83	Other Fin, Insur, Real Estate
1585	Other Pers Serv	89	Other Pers & Misc Services
1586	Other Serv Cntrct Not Spec	89	Other Pers & Misc Services
1589	Petty Cash Pur Servs	89	Other Pers & Misc Services
1593	Controlled Hunt	**	Transfer Payments
1594	Interpretation Animation	89	Other Pers & Misc Services
1595	Srv N E S Exc Gov Dept	89	Other Pers & Misc Services
1596	Srv N E S Pur Gov Dept	84	Business Services
1597	Miscellaneous Services	89	Other Pers & Misc Services
1598	Charges From Other Approp	**	Transfer Payments
1599	Recovery Incremental Cost	**	Transfer Payments
1601	Rental Lands	83	Other Fin, Insur, Real Estate
1605	Rent Engin Wrk	89	Other Pers & Misc Services
1610	Rnt Rad-Tel Equip Sys	89	Other Pers & Misc Services
1611	Aut Tel Answ Serv	89	Other Pers & Misc Services
1612	Rental Message Data Com E	89	Other Pers & Misc Services
1613	Other Communicns Equip	89	Other Pers & Misc Services
1614	Telecom Equip GT	89	Other Pers & Misc Services
1615	Rent EDP Equip	89	Other Pers & Misc Services
1616	EDP Software	89	Other Pers & Misc Services
1619	Word Processors	89	Other Pers & Misc Services
1620	Wd Proc Perip Equip	89	Other Pers & Misc Services
1621	Rnt Photo Print Equip	89	Other Pers & Misc Services
1622	Rnt Off Mach Exc Furn	89	Other Pers & Misc Services
1623	Elec/Auto Office Systs	89	Other Pers & Misc Services
1624	Photo & Audio-Video Equip	89	Other Pers & Misc Services
1625	Rent Mach Equip	89	Other Pers & Misc Services
1630	Lease Motor Vehicle	89	Other Pers & Misc Services
1632	Not Found	**	Tranfer Payments
1635	Rental Aircraft	74	Transportation & Storage
1636	Rental Ship	74	Transportation & Storage
1640	Rent Bldg Off Admin	83	Other Fin, Insur, Real Estate
1641	Rent Bldg Ind Com	83	Other Fin, Insur, Real Estate
1642	Rent Bldg Oth	83	Other Fin, Insur, Real Estate
1643	Office/Admin Bldg	83	Other Fin, Insur, Real Estate
1645	Rent Bldgs DPW	83	Other Fin, Insur, Real Estate

LINE OBJECT SUMMARY CODES AND CORRESPONDING COMMODITIES CODES (cont'd)

Line Object Summary		Commodity Classification	
Code	Description	Code	Description
1650	Rent Gas Cylind	89	Other Pers & Misc Services
1651	Rent Equip N E S	89	Other Pers & Misc Services
1652	Lease Purchase Other	83	Other Fin, Insur, Real Estate
1653	Furniture and Fixtures	39	Furniture & Fixtures
1655	Rental Adv Related	89	Other Pers & Misc Services
1698	Charges From Other Approp	**	Transfer Payments
1699	Recovery Incremental Cost	**	Transfer Payments
1701	Gen Purp Ind Mach	89	Other Pers & Misc Services
1702	Can Elev Mat Handling	89	Other Pers & Misc Services
1704	Ag Mach Impl Exc Tract	89	Other Pers & Misc Services
1711	Air Cndtng Refrig Equip	89	Other Pers & Misc Services
1712	Cook Equip Food	89	Other Pers & Misc Services
1713	Elec Lght Distr Cent Equip	89	Other Pers & Misc Services
1714	Other Elec Equip Appl	89	Other Pers & Misc Services
1715	Electronic Equip	89	Other Pers & Misc Services
1716	Research Equip	89	Other Pers & Misc Services
1717	Scientific Equip	89	Other Pers & Misc Services
1718	Mea Cont Lab Inst ExcXray	89	Other Pers & Misc Services
1719	Sa San Alrm Sign Syst	89	Other Pers & Misc Services
1720	Fire Fight Equip	89	Other Pers & Misc Services
1721	Ser Ind Equip Vend Mach	89	Other Pers & Misc Services
1722	Furniture Fixture	89	Other Pers & Misc Services
1724	Underwater Equip	89	Other Pers & Misc Services
1725	Camera Audio-Vis Equip	89	Other Pers & Misc Services
1727	Other Equip	89	Other Pers & Misc Services
1734	Telecom Equip	89	Other Pers & Misc Services
1735	EDP Equip	89	Other Pers & Misc Services
1736	Off Mch Equip Exc Furn	89	Other Pers & Misc Services
1737	Othe Mach Exc Furn	89	Other Pers & Misc Services
1740	Ships Boats	89	Other Pers & Misc Services
1741	Marine Equip	89	Other Pers & Misc Services
1745	Agr Tractors	89	Other Pers & Misc Services
1746	Rd Mot Veh	89	Other Pers & Misc Services
1747	Misc Veh	89	Other Pers & Misc Services
1748	Accident Rep Dep Vehicle	89	Other Pers & Misc Services
1749	Oversnow Vehicles	89	Other Pers & Misc Services
1750	Maint Rep Serv DP	89	Other Pers & Misc Services
2053	Library Loan Serv	89	Other Pers & Misc Services
1798	Charges From Other Approp	**	Transfer Payments
1799	Recovery Incremental Cost	**	Transfer Payments
1801	Dk Wharf Pier Brkwtr	71	Non-Residential Construction
1802	Retain Wll Embank Ripr	71	Non-Residential Construction
1805	Gauge Stations	71	Non-Residential Construction
1806	Cnl Lck Ota Mar Fac	71	Non-Residential Construction
1810	Highwy Rd St Const	71	Non-Residential Construction
1811	Oth Prkng Lot Sdwlk	71	Non-Residential Construction
1815	Watermain Hydr Serv	71	Non-Residential Construction
1816	Sewage Syst Connect	71	Non-Residential Construction

LINE OBJECT SUMMARY CODES AND CORRESPONDING COMMODITIES CODES (cont'd)

Line Object Summary		Commodity Classification	
Code	Description	Code	Description
1817	Oth Ditche Drain Pump	71	Non-Residential Construction
1820	Dam Reserv	71	Non-Residential Construction
1825	Pow Transm Dist Line	71	Non-Residential Construction
1826	Other Gnrt Plnt St Light	71	Non-Residential Construction
1830	Teleg Telep Etc Lines	71	Non-Residential Construction
1835	Lndscap Sod Snw Rem	71	Non-Residential Construction
1836	Brdg Culv Viad Etc	72	Repair Construction
1837	Enc Snwshed Sgn Etc	72	Repair Construction
1838	Outd Recreat Fac	72	Repair Construction
1839	Rep Bldg Work	72	Repair Construction
1840	Monument Plaque	71	Non-Residential Construction
1841	Other Engin Cost	71	Non-Residential Construction
1842	Gas & Oil Facilities	71	Non-Residential Construction
1845	Office Bldg	71	Non-Residential Construction
1850	Wrhous Strhous Etc	71	Non-Residential Construction
1851	Hotel Clb Rest Etc	71	Non-Residential Construction
1852	Garag Serv Stat	71	Non-Residential Construction
1853	Oth Str Theat Etc	72	Repair Construction
1860	Fact Plnt Workshp	72	Repair Construction
1870	Bdcast Rad TV Rel Stat	72	Repair Construction
1871	Laboratory Bldg	72	Repair Construction
1872	Oth Frm Bldg Grhous Etc	72	Repair Construction
1875	Perman Dwellings	72	Repair Construction
1880	Tenant Serv DPW	**	Transfer Payments
1898	Charges From Other Approp	**	Transfer Payments
1899	Recovery Incremental Cost	**	Transfer Payments
1901	Elec Consump	78	Electric Power
1902	Elect Peak Load	78	Electric Power
1903	Natural Gas	79	Other Utilities
1905	Sewer	79	Other Utilities
1906	Water	79	Other Utilities
1907	Other Pub Util	79	Other Utilities
1999	Recovery Incremental Cost	**	Transfer Payments
2001	Meat Meat Prep	14	Meat Products
2002	Food Mat Food Prep	22	Misc Food Products
2003	Bever Tobaco Exc Hosp	22	Misc Food Products
2004	Fodder Feed	3	Other Agricultural Prod
2006	Rope Fabric	33	Other Textile Products
2007	Crude Anim Veg Ined	33	Other Textile Products
2008	Crude Wood Mat	4	Forestry Products
2009	Other San Grav Met	12	Non-Metallic Minerals
2010	Topsoil	12	Non-Metallic Minerals
2011	Heating Oil	62	Gasoline & Fuel Oil
2012	Diesel Fuel	62	Gasoline & Fuel Oil
2013	Propane Gas LPG	62	Gasoline & Fuel Oil
2014	Automotive Gas	62	Gasoline & Fuel Oil
2015	Aviation Gas	62	Gasoline & Fuel Oil
2016	Jet Fuel	62	Gasoline & Fuel Oil

LINE OBJECT SUMMARY CODES AND CORRESPONDING COMMODITIES CODES (cont'd)

Line Object Summary		Commodity Classification	
Code	Description	Code	Description
2017	Asphalt	63	Other Petr & Coal Products
2018	Other Petro Coal Prod	63	Other Petr & Coal Products
2019	Leath Fur Rub Mat	28	Other Rubber Products
2020	Wood Fab Mat	38	Other Wood Fabricated Mat
2021	Paper Paper Board	41	Newsprint & Other Paper Stock
2022	Textile Fab Mat	33	Other Textile Products
2023	Chemical Rel Prod	64	Industrial Chemicals
2024	Hydrogen Helium	64	Industrial Chemicals
2025	Plastic Bag Sheet	29	Plastic Fabricated Products
2026	Gunpowder Explos	67	Other Chemical Products
2027	Chlorin Oxyg Acetyl	64	Industrial Chemicals
2028	Iron Steel Alloys	45	Iron & Steel Products
2029	Non-Ferrous Met	49	Other Non-Ferrous Metal Prod
2030	Met Fab Basic Prod	52	Other Metal Fabricated Prod
2031	Cement	60	Cement & Concrete Products
2032	De-Icing Salt	12	Non-Metallic Minerals
2033	Roofing Mat	63	Other Petr & Coal Products
2034	Glass	61	Other non-Metallic Min Prod
2035	Insulation Mat	61	Other Non-Metallic Min Prod
2036	Towels and Bathing Suits	35	Clothing & Accessories
2037	Exhibits Display Mat	69	Other Manufactured Products
2038	Period Furniture	39	Furniture & Fixtures
2039	Uniforms	35	Clothing & Accessories
2040	Protective Clothing	35	Clothing & Accessories
2041	Footwear Apparel Access	35	Clothing & Accessories
2042	Toilet Clean Prep Etc	67	Other Chemical Products
2043	Recreation Equip	69	Other Manufactured Products
2044	House Furnishing	39	Furniture & Fixtures
2045	Kitch Utens Cutl Tablew	52	Other Metal Fabricated Prod
2048	Stck Item Oth DSS	69	Other Manufactured Products
2049	Audio & Video Tapes	58	Appliances & Receivers, House
2050	Medic Sup Ophth Ortho	68	Scientific Equipment
2051	Library Stck Print	43	Printing/Publishing
2052	Maps Charts	43	Printing/Publishing
2053	Lib Loan Serv	89	Other Pers & Misc Services
2054	Station Off Supplies	42	Paper Products
2055	Draft Art Supp	42	Paper Products
2056	Telety Paper Tap	42	Paper Products
2057	Facsimile Paper	42	Paper Products
2058	Photoc Pap Chem	42	Paper Products
2059	Data Process Supp	42	Paper Products
2060	Photograph Goods	68	Scientific Equipment
2061	Med Pharm Prod	66	Pharmaceuticals
2062	Firearm Weapn Ammunit	52	Other Metal Fabricated Prod
2063	Contain Cls Return	52	Other Metal Fabricated Prod
2064	Tarpaulins	33	Other Textile Products
2065	Camera Audio-Vis	68	Scientific Equipment
2067	Flags	33	Other Textile Products

LINE OBJECT SUMMARY CODES AND CORRESPONDING COMMODITIES CODES (cont'd)

Line Object Summary		Commodity Classification	
Code	Description	Code	Description
2068	Paint	67	Other Chemical Products
2069	Garden Supp	69	Other Manufactured Products
2070	Misc Prod Audio-Vis Blb	69	Other Manufactured Products
2071	Hardware	52	Other Metal Fabricated Prod
2072	Advances Artifacts	**	Transfer Payments
2073	Reprodn Hist Artifacts	**	Transfer Payments
2074	Works of Art Cole Items Ar	**	Transfer Payments
2075	Str Open Balanc	**	Transfer Payments
2076	Gen Purch Excl Cl	**	Transfer Payments
2077	Gen Str Issues	**	Transfer Payments
2078	Inventory Adjust	**	Transfer Payments
2079	Str Surpl Disp Cadc	**	Transfer Payments
2081	Slides Films and HV Tapes	58	Appliances & Receivers, House
2082	Subscriptions	43	Printing & Publishing
2083	Purch P Cash Incl Tax	43	Printing & Publishing
2085	Adv Related-Mat Supp	43	Printing & Publishing
2086	Pub Related-Mat	43	Printing & Publishing
2098	Charges From Other Approp	**	Transfer Payments
2099	Recovery Incremental Cost	**	Transfer Payments
2104	Gen Purp Equip	54	Other Industrial Machinery
2105	Cnvey Elev Mat Handl Equi	54	Other Industrial Machinery
2106	Sp Ind Equip	54	Other Industrial Machinery
2107	Agr Mach Implem	53	Agricultural Machinery
2111	Ht Air Cond Refrig Equip	59	Other Elec Equipment
2112	Cook Equip Food	58	Appliances & Receivers, House
2113	Plumb Equip Fit	69	Other Manufactured Products
2114	Elec Lght Dist Cont Equip	59	Other Elec Equipment
2116	Oth Elec Appl Equip	59	Other Elec Equipment
2117	Gen Elec Equip	59	Other Elec Equipment
2118	Batteries	59	Other Elec Equipment
2119	Lab Glassware	68	Scientific Equipment
2120	Oth Lab Supp	68	Scientific Equipment
2121	Scientific Equip	68	Scientific Equipment
2122	Mea Cont Med Opt Inst	68	Scientific Equipment
2123	Signal Syst	59	Other Elec Equipment
2124	Saf Sanit Equip	68	Scientific Equipment
2125	Serv Ind Equip	59	Other Elec Equipment
2126	Hnd Tool Cutl	52	Other Metal Fabricated Prod
2127	Grader Blades	52	Other Metal Fabricated Prod
2128	Oth Equip Inc X-ray	68	Scientific Equipment
2129	Photographic Equipment	68	Scientific Equipment
2135	EDP Equip	59	Other Elec Equipment
2136	Telecom Equip Radios	59	Other Elec Equipment
2137	Elect/Auto Office Syst Eq	69	Other Manufactured Products
2138	Other Office Equip	69	Other Manufactured Products
2139	Software Packages	69	Other Manufactured Products
2140	Ships Boats	57	Other Transport Equipment
2141	Marine Equipment	57	Other Transport Equipment

LINE OBJECT SUMMARY CODES AND CORRESPONDING COMMODITIES CODES (cont'd)

Line Object Summary		Commodity Classification	
Code	Description	Code	Description
2146	Rd Mot Veh	55	Motor Vehicles
2147	Rub Tires Tubes	27	Tires & Tubes
2148	Misc Vehicles	57	Other Transport Equipment
2149	Oversnow Vehicles	57	Other Transport Equipment
2198	Chrg Oth Approp	**	Transfer Payments
2199	Recovery Incremental Cost	**	Transfer Payments
2201	All Acquis Cost	**	Transfer Payments
2202	Dck Whar Pier Brkwtr	71	Non-Residential Construction
2203	Retain Wll Embank Ripr	71	Non-Residential Construction
2204	Canal Waterway	71	Non-Residential Construction
2205	Stone Walls	71	Non-Residential Construction
2207	Other Marin Cost	71	Non-Residential Construction
2208	Hrd Su Pav St Highwy	71	Non-Residential Construction
2208	Hrd Su Pav St Highwy	71	Non-Residential Construction
2209	Gravl Stn St Rd	71	Non-Residential Construction
2212	Othe Sidewlk Pth Prk Lot	71	Non-Residential Construction
2220	Wtrmain Hydr Serv	71	Non-Residential Construction
2221	Sewage Syst Connect	71	Non-Residential Construction
2222	Oth Ditche Drain Pump	71	Non-Residential Construction
2225	Dams Reserv Irrig	71	Non-Residential Construction
2230	Pow Transm Dist Line	71	Non-Residential Construction
2231	Street Light	71	Non-Residential Construction
2232	Elec Transform Stat	71	Non-Residential Construction
2245	Prk Syst Lndscp Sod	71	Non-Residential Construction
2246	Brdg Culv Viad Etc	71	Non-Residential Construction
2247	Fnc Snwshed Sgn Etc	71	Non-Residential Construction
2248	Monument Plaques	71	Non-Residential Construction
2249	Outdoor Recreat Facil	71	Non-Residential Construction
2250	Other Engin Const	71	Non-Residential Construction
2251	Oil & Gas Facilities	71	Non-Residential Construction
2252	Signs	71	Non-Residential Construction
2255	Office Bldg	71	Non-Residential Construction
2260	Wrhous Strhous Etc	71	Non-Residential Construction
2261	Hotel Clb Rest Etc	71	Non-Residential Construction
2262	Garage Serv Stat	71	Non-Residential Construction
2263	Oth Str Theat Etc	71	Non-Residential Construction
2270	Pass Term Air Bus Etc	71	Non-Residential Construction
2272	Oth Bldg Const Restor	71	Non-Residential Construction
2273	Buildings for Telecom EDP	71	Non-Residential Construction
2275	Resident Bldg	70	Residential Construction
2280	Capit Proj DPW Revol Fund	**	Transfer Payments
2301	Gen Purp Ind Mach	54	Other Industrial Machinery
2302	Cnvey Elev Mat Handl Equi	54	Other Industrial Machinery
2303	Sp Ind Mach	54	Other Industrial Machinery
2304	Agr Mach Impl	53	Agricultural Machinery
2313	Ht Air Cdtng Refrig Equip	59	Other Electrical Equipment
2314	Cook Equip Food	58	Appliances & Receivers, House
2315	Generators	59	Other Electrical Equipment

LINE OBJECT SUMMARY CODES AND CORRESPONDING COMMODITIES CODES (cont'd)

Line Object Summary		Commodity Classification	
Code	Description	Code	Description
2316	Ele Lght Distr Cont Equip	59	Other Electrical Equipment
2317	Oth Elec Equip Appl	59	Other Electrical Equipment
2318	Air Qual Meas Equip Oper	68	Scientific Equipment
2320	Electronic Equip	68	Scientific Equipment
2321	Scientific Equip	68	Scientific Equipment
2322	Mea Cont Lab Inst ExcXray	69	Other Manufactured Products
2329	Firefight Equip	69	Other Manufactured Products
2330	Water Sew Pumps	59	Other Elec Equipment
2331	Fs San Alrm Sign Syst	59	Other Elec Equipment
2332	Srv Ind Equip Vend Mach	59	Other Elec Equipment
2333	Furn Fixt Exc Dss	39	Furniture & Fixtures
2334	Furn Fixt Dss	39	Furniture & Fixtures
2335	Photo Audio-Vis Equip	68	Scientific Equipment
2336	Camping Equip	69	Other Manufactured Products
2337	Outboard Motor	69	Other Manufactured Products
2338	Lawn Mowers	69	Other Manufactured Products
2346	X-Ray Relat Equip	68	Scientific Equipment
2347	Oth Equip Exc Photo	68	Scientific Equipment
2348	Other Furniture and Fixtu	39	Furniture & Fixtures
2351	Image Video and Comm Equip	76	Telephone/Telegraph
2352	Voice Comm Equip Res Dev	76	Telephone/Telegraph
2354	Mess Data & Comp Equip	76	Telephone/Telegraph
2357	Other EDP Equip	59	Other Elec Equipment
2358	Off Mch Equip $500+	59	Other Elec Equipment
2359	EDP Equip Periferals	59	Other Elec Equipment
2361	EDP Software	59	Other Elec Equipment
2362	Other Office Mach & Equip	69	Other Manufactured Products
2365	Ship Boat Rel Equip	57	Other Transportation Equip
2370	Agr Tractors	53	Agricultural Machinery
2371	Rd Motor Vehic	55	Motor Vehicles
2372	Mis Veh Oth Rd Veh	55	Motor Vehicles
2398	Charges From Other Approp	**	Transfer Payments
2402	Transf Pay No-Prof Inst	**	Transfer Payments
2501	Write-Off Losses	**	Transfer Payments
2502	Losses of Money Under 500	**	Transfer Payments
2510	Damage Claims	**	Transfer Payments
2511	Ex Gratia Payments	**	Transfer Payments
2513	Court Awards Federal	**	Transfer Payments
2515	Int Etc Chr Overd Acc	**	Transfer Payments
2516	Discounts Earned	**	Transfer Payments
2521	Com Pd Vend Resl Lic	**	Transfer Payments
2522	Cost Shr Agree Pay	**	Transfer Payments
2524	Pay Cust Dut Tax	**	Transfer Payments
2525	Pay Misc Tx	**	Transfer Payments
2527	Other Misc Expend	**	Transfer Payments
2528	Veh Regis Fee	**	Transfer Payments
2530	Departmental Awards	**	Transfer Payments
2535	Misc Exp - Adv Related	**	Transfer Payments

LINE OBJECT SUMMARY CODES AND CORRESPONDING COMMODITIES CODES (cont'd)

Line Object Summary		Commodity Classification	
Code	Description	Code	Description
2536	Misc Exp - Pub Related	**	Transfer Payments
2538	Misc Exp - Publ Opinion Res	**	Transfer Payments
2529	Misc Exp - Publ Relats Rel	**	Transfer Payments
2589	Undistributed IS's	**	Transfer Payments
2598	Charges Other Approps	**	Transfer Payments
2811	Pt Cash Adv Disbur	**	Transfer Payments
9000	Unspecified Allotments	**	Transfer Payments
9600	Salary & Wage Distribution	**	Transfer Payments
9698	Transfers	**	Transfer Payments
9700	Equipment Distribution	**	Transfer Payments
9798	Transfers	**	Transfer Payments
9799	Transfers	**	Transfer Payments

APPENDIX B

STATISTICS CANADA - INDUSTRY AND COMMODITY CLASSIFICATIONS FOR INPUT-OUTPUT ANALYSIS

STATISTICS CANADA - INDUSTRY AND COMMODITY CLASSIFICATIONS FOR INPUT-OUTPUT ANALYSIS

Industry Classification		Commodity Classification	
1	Agriculture	1	Grains
		2	Live Animals
		3	Other Agricultural Products
2	Forestry	4	Forestry Products
3	Fishing, Hunting & Trapping	5	Fish Landings
		6	Hunting & Trapping Products
4	Metal Mines	7	Iron Ores & Concentrates
		8	Other Metal Ores & Concentrates
5	Mineral Fuels	9	Coal
		10	Crude Mineral Oils
		11	Natural Gas
6	Non-Metal Mines & Quarries	12	Non-Metallic Minerals
7	Services Incidental to Mining	13	Services Incidental to Mining
8	Food & Beverage Industries	14	Meat Products
		15	Dairy Products
		16	Fish Products
		17	Fruits & Vegetables Preparation
		18	Feeds
		19	Flour, Wheat,Meal & Other Cereals
		20	Breakfast Cereal & Bakery Products
		21	Sugar
		22	Miscellaneous Food Products
		23	Soft Drinks
		24	Alcoholic Beverages
9	Tobacco Products Industries	25	Tobacco Processed Unmanufactured
		26	Cigarettes & Tobacco Manufactured
10	Rubber & Plastics Products Industries	27	Tires & Tubes
		28	Other Rubber Products
		29	Plastic Fabricated Products
11	Leather Industries	30	Leather & Leather Products
12	Textile Industries	31	Yarns & Man-Made Fibres
		32	Fabrics
		33	Other Textile Products
13	Knitting Mills	34	Hosiery & Knitted Wear
14	Clothing Industries	35	Clothing & Accessories
15	Wood Industries	36	Lumber & Timber
		37	Veneer & Plywood
		38	Other Wood Fabricated Products
16	Furniture & Fixture Industries	39	Furniture & Fixtures
17	Paper & Allied Industries	40	Pulp
		41	Newsprint & Other Paper Stock
		42	Paper Products
18	Printing & Publishing	43	Printing & Publishing
		44	Advertising, Print Media
19	Primary Metal Industries	45	Iron & Steel Products
		46	Aluminum Products
		47	Copper & Copper Alloy Products
		48	Nickel Products
		49	Other Non-Ferrous Metal Products

STATISTICS CANADA - INDUSTRY AND COMMODITY CLASSIFICATIONS FOR INPUT-OUTPUT ANALYSIS (continued)

Industry Classification		Commodity Classification	
20	Metal Fabricating Industries	50	Boiler, Tanks & Plates
		51	Fabricated Structural Metal Prod.
		52	Other Metal Fabricated Products
21	Machinery Industries	53	Agricultural Machinery
		54	Other Industrial Machinery
22	Transportation Equipment Industries	55	Motor Vehicles
		56	Motor Vehicle Parts
		57	Other Transport Equipment
23	Electrical Products Industries	58	Appliances & Receivers, Household
		59	Other Electrical Products
24	Non-Metallic Mineral Products Industries	60	Cement & Concrete Products
		61	Other Non-Metallic Mineral Prod.
25	Petroleum & Coal Products	62	Gasoline & Fuel Oil
		63	Other Petroleum & Coal Products
26	Chemical & Chemical Products Industries	64	Industrial Chemicals
		65	Fertilizers
		66	Pharmaceuticals
		67	Other Chemical Products
27	Miscellaneous Manufacturing Industries	68	Scientific Equipment
		69	Other Manufactured Products
28	Construction Industry	70	Residential Construction
		71	Non-Residential Construction
		72	Repair Construction
29	Transportation & Storage	73	Pipeline Transportation
		74	Transportation & Storage
		90	Transportation Margins
30	Communication	75	Radio & Television Broadcasting
		76	Telephone & Telegraph
		77	Postal Services
31	Electric Power, Gas, Other Utilities	78	Electric Power
		79	Other Utilities
32	Wholesale trade	80	Wholesale margins
33	Retail trade	81	Retail Margins
34	Owner Occupied Dwellings	82	Imputed Rent, Owner Occup. Dwell.
35	Other Finance, Insurance, Real Estate	83	Other Finance, Insur., Real Est.
36	Education & Health Services	85	Education Services
		86	Health Services
37	Amusement & Recreation Services	87	Amusement & Recreation Serv.
38	Services to Business Management	84	Business Services
		91	Operating, Office, Lab & Food
		92	Travel, Advertising & Promotion
39	Accommodation & Food Services	88	Accommodation & Food Services
40	Other Personal & Miscellaneous Services	89	Other Personal & Misc. Services

APPENDIX C

ANALYSIS AND TRANSFORMATION OF LINE OBJECT SUMMARY DATA FOR THE CANADIAN PARKS SERVICE IN 1987/88

ANALYSIS AND TRANSFORMATION OF LINE OBJECT SUMMARY DATA FOR THE CANADIAN PARKS SERVICE IN 1987/88

As described in the text, the Line Object Summary data which provides budget details for the Canadian Parks Service is too detailed for direct comparison with provincial data on sales and investment by each major economic sector. Consequently, the Line Object Summary data must be aggregated, as described in Section 3.2.4. This aggregation process involved a number of steps which are detailed below.

First, the Canadian Parks Service Line Object Summary Codes were aggregated into the standard commodity codes used in the input-output tables, based on the conversion process detailed in Appendix A. The resulting summary of Canadian Parks Service expenditure data based on the standard commodity codes is provided in Table C-1.

Second, the commodity expenditure data were aggregated into the standard industrial classifications using the conversion process in Appendix B. The resulting breakdown of expenditure data by industry is summarized in Table C-2.

Third, the industrial expenditure data was then grouped into the five major industrial sectors for which investment data was available. The aggregation process described in Table 1 was used to make this transformation.

Fourth, it was necessary to develop provincial estimates of Canadian Parks Service spending from the available information which reports spending by six administrative regions. To make this conversion, information describing the provincial purchase patterns of each administrative region was provided by the Canadian Parks Service; these patterns are shown in Table C-3.

The results of this four stage conversion program are summarized in Table C-4 which provides estimates of Canadian Parks Service spending by major economic sector and province for fiscal year 1987/88. The data in this table have been used as the basis for estimating private-sector investment induced by the Canadian Parks Service for fiscal year 1988/89.

Table C-1

SUMMARY OF PURCHASES OF GOODS AND SERVICES, BY DETAILED INDUSTRY GROUP AND ADMINISTRATIVE REGION, MADE BY THE CANADIAN PARKS SERVICE IN 1987/88
(Thousands of Dollars)

Industry	Park Headquarters	Atlantic Region	Quebec Region	Ontario Region	Prairie Region	Western Region	TOTAL
Agriculture	0.0	3.3	0.1	0.1	6.3	62.1	71.9
Forestry	0.8	16.2	49.5	17.8	18.3	36.8	139.4
Non-Metal Mines & Quarries	16.7	237.1	101.9	67.2	135.9	524.7	1,083.5
Food & Beverage	0.7	16.1	13.1	8.3	129.8	128.9	296.8
Rubber & Plastics	1.9	74.8	43.8	32.1	45.8	149.4	347.7
Textiles	1.7	36.8	17.1	36.5	20.2	23.1	135.4
Clothing	12.5	102.3	74.0	237.7	95.1	227.6	749.2
Wood Industries	3.5	371.9	257.9	283.4	243.5	213.5	1,373.8
Furniture/Fixtures	265.3	56.2	76.2	145.8	281.7	91.6	916.7
Paper/Allied Ind.	239.9	185.9	124.0	173.7	156.6	332.5	1,212.6
Printing/Publishing	883.1	532.0	714.6	608.3	322.4	572.1	3,632.5
Primary Metal	0.8	63.4	97.4	91.5	40.7	44.9	338.7
Metal Fabricating	29.6	213.7	133.8	239.1	211.8	675.8	1,503.8
Machinery	29.3	34.5	81.0	197.0	212.6	570.9	1,125.3
Transportation Equip.	30.5	683.9	655.8	1,004.2	646.9	1,935.3	4,956.7
Electrical Products	5,472.3	467.3	302.3	254.2	367.8	824.9	7,688.8
Non-Metallic Minerals	0.4	38.7	45.7	67.4	48.3	45.6	246.2
Petroleum & Coal Prod.	6.5	790.3	319.8	438.1	878.4	1,794.7	4,227.8
Chemical & Related Prod.	13.8	343.6	149.4	133.6	149.6	579.1	1,369.1
Misc. Manufacturing	442.8	1,021.9	407.4	781.1	1,520.6	1,494.9	5,668.7
Construction	127.9	3,723.3	5,816.0	4,253.0	3,241.8	10,439.0	27,600.9
Transportation/Storage	111.6	116.1	131.2	139.4	1,627.1	646.7	2,772.0
Communication	793.4	891.2	781.6	833.9	981.7	962.6	5,244.2
Electric Power & Other Utilities	0.3	812.4	631.7	577.0	641.6	1,312.9	3,976.0
Other Finance, Real Estate	76.4	11.9	198.9	237.3	270.7	113.7	908.9
Education & Health Services	854.9	76.1	142.3	73.6	217.5	299.8	1,664.3
Services to Business Management	6,043.4	3,358.9	3,043.7	3,523.1	3,238.1	6,421.5	25,628.8
Accommodation & Food Services	32.6	19.6	14.3	16.8	7.5	90.8	181.7
Other Personal & Miscellaneous	1,976.4	2,886.4	1,956.0	1,979.9	2,326.0	2,144.7	13,269.1
TOTAL	17,468.9	17,185.8	16,380.4	16,451.2	18,084.1	32,760.1	118,330.5

Source: Environment Canada, Line Object Summary, Canadian Parks Service, Fiscal Year 1987/88

Table C-2

SUMMARY OF PURCHASES OF GOODS AND SERVICES, BY INDUSTRIAL SECTOR AND ADMINISTRATIVE REGION, MADE BY THE CANADIAN PARKS SERVICE IN 1987/88

(Thousands of Dollars)

Sector	Park Headquarters	Atlantic Region	Quebec Region	Ontario Region	Prairie Region	Western Region	TOTAL
Primary Industries	17.5	256.6	151.4	85.2	160.5	623.7	1,294.8
Construction	127.9	3,723.3	5,816.0	4,253.0	3,241.8	10,439.0	27,600.9
Manufacturing	7,434.5	5,033.3	3,513.2	4,731.9	5,372.1	9,704.7	35,789.7
Utilities	905.2	1,819.7	1,544.5	1,550.3	3,250.4	2,922.2	11,992.2
Commercial	8,983.7	6,353.0	5,355.3	5,830.8	6,059.5	9,070.6	41,652.8
TOTAL	17,468.8	17,185.8	16,380.4	16,451.2	18,084.1	32,760.1	118,330.5

Table C-3

PROVINCIAL DISTRIBUTION OF PURCHASES OF GOODS AND SERVICES BY ADMINISTRATIVE REGIONS OF THE CANADIAN PARKS SERVICE IN 1987/88

(Percent of Regional Spending)

	Park Headquarters	Atlantic Region	Quebec Region	Ontario Region	Prairie Region	Western Region
Newfoundland	0.0	15.8	0.0	0.0	0.0	0.0
P.E.I.	0.0	6.9	0.0	0.0	0.0	0.0
Nova Scotia	0.0	64.6	0.0	0.0	0.0	0.0
New Brunswick	0.0	12.7	0.0	0.0	0.0	0.0
Quebec	50.0	0.0	100.0	0.0	0.0	0.0
Ontario	50.0	0.0	0.0	100.0	0.0	0.0
Manitoba	0.0	0.0	0.0	0.0	41.7	0.0
Saskatchewan	0.0	0.0	0.0	0.0	24.6	0.0
Alberta	0.0	0.0	0.0	0.0	0.0	77.7
British Columbia	0.0	0.0	0.0	0.0	0.0	22.3
Yukon & NWT	0.0	0.0	0.0	0.0	33.7	0.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Source: Canadian Parks Service.

Table C-4

ESTIMATED VALUE OF PURCHASES OF GOODS AND SERVICES, BY INDUSTRIAL SECTOR AND PROVINCE, MADE BY THE CANADIAN PARKS SERVICE IN 1987/88

(Thousands of Dollars)

	Primary Industries	Construction	Manufacturing Industries	Utilities	Commercial	TOTAL
Newfoundland	40.5	588.3	795.3	287.5	1,003.8	2,715.4
P.E.I.	17.7	256.9	347.3	125.6	438.4	1,185.8
Nova Scotia	165.8	2,405.2	3,251.5	1,175.5	4,104.0	11,102.1
New Brunswick	32.6	472.9	639.2	231.1	806.8	2,182.6
Quebec	160.2	5,879.9	7,230.5	1,997.1	9,847.1	25,114.8
Ontario	93.9	4,316.9	8,449.2	2,002.9	10,322.7	25,185.6
Manitoba	66.9	1,351.8	2,240.1	1,355.4	2,526.8	7,541.0
Saskatchewan	39.5	797.5	1,321.5	799.6	1,490.6	4,448.7
Alberta	484.6	8,111.1	7,540.6	2,270.5	7,047.8	25,454.6
British Columbia	139.1	2,327.9	2,164.2	651.6	2,022.7	7,305.5
Yukon & NWT	54.1	1,092.5	1,810.4	1,095.4	2,042.0	6,094.3
Canada	1,294.8	27,600.9	35,789.7	11,992.2	41,652.8	118,330.5

APPENDIX D

ANALYSIS AND TRANSFORMATION OF NATIONAL DATA ON SALES BY MAJOR INDUSTRIES

ANALYSIS AND TRANSFORMATION OF NATIONAL DATA ON SALES BY MAJOR INDUSTRIES

The best comprehensive data on the total value of sales by industry in Canada is available from Statistics Canada in Catalogue 61-003, Industrial Corporations. This data is based on a survey of selected companies within each industry grouping and survey data is extrapolated to provide national estimates of sales revenues and other corporate statistics for each group. A summary of the resulting estimates of the national value of sales for 23 relevant industrial categories for 1983 to 1988 is provided in Table D-1.

To develop estimates of sales on a provincial basis, the national estimates were prorated among provinces according to 1979 information on the value of provincial output for each major industry. This 1979 information was produced as part of the Input-Output Model of the Canadian economy, as determined by Statistics Canada, and is summarized in tables D-2 and D-3. A more recent estimate of the provincial share of national sales would have been preferable but was unavailable at the time of writing.

The third step in the analysis involved grouping the provincial estimates of sales by industry into the five major sectors for which data on investment were available. This aggregation procedure followed the procedure detailed in Table 1 and the resulting estimates of sectoral sales in each province are provided in Table D-4.

As noted in the main report, the sales data has a couple of significant weaknesses. First, the provincial share of national production has definitely changed since 1979 and so the provincial estimates must be considered relatively crude. The national estimates are accurate, however. The second problem is that not all industries are represented in the Statistics Canada data. This is particularly true for primary industries where only sales for the mining industry are reported. Fortunately, this is not considered a serious problem because only one percent of purchases the Canadian Parks Service came from primary industries. And, for manufactured products, which comprised 30 percent of Canadian Parks Service expenditures, the sales data is quite comprehensive.

Table D-1

TOTAL SALES OF GOODS AND SERVICES
(Millions of Current Dollars)

	1983	1984	1985	1986	1987	1988
Mining	26,119	30,370	33,083	27,133	33,638	37,569
Manufacturing	227,056	254,946	270,557	279,974	300,440	330,619
Construction	36,109	33,550	38,138	44,289	59,022	64,224
Utilities						
Pipeline	5,699	6,648	6,907	6,230	5,256	5,366
Transportation	18,111	21,491	23,414	24,989	26,951	28,744
Storage	4,810	4,922	3,932	4,098	4,594	4,442
Communication	9,350	10,198	10,964	11,828	12,993	14,195
Utilities	1,848	2,086	2,366	2,529	2,624	3,263
Gas Distribution	7,026	7,643	9,511	7,912	7,256	8,187
Total	46,844	52,988	57,094	57,586	59,674	64,197
Commercial						
Wholesale:						
Petroleum	6,998	7,224	7,339	5,135	7,763	7,107
Food Prod	23,160	24,402	25,513	27,961	30,745	32,887
Motor Veh	8,834	10,261	12,080	13,063	14,769	15,903
Machinery	12,005	13,928	15,075	15,989	18,118	19,045
Lumber	10,954	10,602	11,279	12,434	16,262	16,163
Other Who	50,879	55,780	57,610	59,228	68,755	74,564
Sub-Total	112,830	122,197	128,896	133,810	156,412	165,669
Retail:						
Food	25,502	26,910	27,780	28,402	33,553	37,213
Dept Stores	18,713	19,809	20,683	21,269	20,581	20,999
Motor Vehicles	19,068	21,726	25,158	27,401	31,129	32,075
Other Retail	40,504	46,192	49,995	51,928	60,232	64,775
Sub-Total	103,787	114,637	123,616	129,000	145,495	155,062
Real Estate	16,254	17,437	18,385	19,073	23,469	25,256
Hotel/Restaurant	13,045	14,815	15,279	15,967	18,850	20,621
Business Services	16,882	18,342	18,492	18,450	23,787	24,089
Other Services	12,531	12,975	14,196	16,178	19,193	23,524
Total	275,329	300,403	318,864	332,478	387,206	414,221
Total Industries	614,000	675,542	721,088	745,750	839,980	910,830

Source: Statistics Canada, Catalogue 61-003, Industrial Corporations

Table D-2

ESTIMATED SALES OF GOODS AND SERVICES BY PROVINCE IN 1979
(Millions of 1979 Dollars)

	Primary	Mining	Manufact.	Construct.	Utilities	Commercial	Total
Newfoundland	239	1,027	1,054	875	572	1,819	5,586
P.E.I.	152	0	223	185	125	452	1,137
Nova Scotia	501	121	3,277	1,105	1,120	3,494	9,618
New Brunswick	431	278	3,260	1,084	1,054	3,245	9,352
Quebec	2,860	1,821	41,762	9,320	8,154	35,649	99,566
Ontario	4,739	2,306	79,696	11,948	14,166	61,833	174,688
Manitoba	1,363	465	4,386	1,499	2,282	5,811	15,806
Saskatchewan	2,808	1,945	1,898	2,121	1,507	5,106	15,385
Alberta	3,044	14,143	9,183	9,433	4,595	18,667	59,065
British Columbia	3,674	2,618	15,479	5,706	5,297	18,392	51,166
Yukon & NWT	8	619	25	552	253	304	1,761
Canada	19,819	25,343	160,243	43,828	39,125	154,772	443,130

Source: 1979 Production by Province as reported in the 1979 Input-Output Model of the Canadian economy.

Table D-3

PROPORTION OF NATIONAL SALES OF GOODS AND SERVICES FROM EACH PROVINCE IN 1979*
(Percent of National Sales in Each Sector)

	Primary	Mining	Manufact.	Construct.	Utilities	Commercial	Total
Newfoundland	1.21	4.05	0.66	2.00	1.46	1.18	1.26
P.E.I.	0.77	0.00	0.14	0.42	0.32	0.29	0.26
Nova Scotia	2.53	0.48	2.05	2.52	2.86	2.26	2.17
New Brunswick	2.17	1.10	2.03	2.47	2.69	2.10	2.11
Quebec	14.43	7.19	26.06	21.26	20.84	23.03	22.47
Ontario	23.91	9.10	49.73	27.26	36.21	39.95	39.42
Manitoba	6.88	1.83	2.74	3.42	5.83	3.75	3.57
Saskatchewan	14.17	7.67	1.18	4.84	3.85	3.30	3.47
Alberta	15.36	55.81	5.73	21.52	11.74	12.06	13.33
British Columbia	18.54	10.33	9.66	13.02	13.54	11.88	11.55
Yukon & NWT	0.04	2.44	0.02	1.26	0.65	0.20	0.40
Canada	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Calculated from Table D-2.

* Estimate based on the provincial distribution of sales for each industry as reported in the 1979 Input-Output Model for the Canadian economy.

Table D-4

ESTIMATED VALUE OF TOTAL SALES, BY INDUSTRIAL SECTOR AND PROVINCE, 1987
(Millions of Dollars)

	Primary Industries	Construction	Manufacturing Industries	Utilities	Commercial	TOTAL
Newfoundland	1,363.1	1,178.3	1,976.1	872.4	4,550.7	9,940.6
P.E.I.	0.0	249.1	418.1	190.7	1,130.8	1,988.7
Nova Scotia	160.6	1,488.1	6,144.1	1,708.2	8,741.2	18,242.2
New Brunswick	369.0	1,459.8	6,112.2	1,607.6	8,118.3	17,666.9
Quebec	2,417.0	12,551.0	78,299.7	12,436.6	89,186.1	194,890.4
Ontario	3,060.8	16,090.1	149,422.2	21,606.2	154,692.8	344,872.1
Manitoba	617.2	2,018.7	8,223.3	3,480.5	14,537.9	28,877.6
Saskatchewan	2,581.6	2,856.3	3,558.6	2,298.5	12,774,1	24,069.1
Alberta	18,772.1	12,703.2	17,217.2	7,008.4	46,700.8	102,401.7
British Columbia	3,474.9	7,684.1	29,021.6	8,079.1	46,012.8	94,272.5
Yukon & NWT	821.6	743.4	46.9	385.9	760.5	2,758.3
Canada	33,637.9	59,022.1	300,440.0	59,674.1	387,206.0	839,980.1

Source: Calculated by combining tables D-1 and D-3.

APPENDIX E

ANALYSIS AND TRANSFORMATION OF NATIONAL DATA ON INVESTMENT BY MAJOR INDUSTRIES

ANALYSIS AND TRANSPORMATION OF NATIONAL DATA ON INVESTMENT BY MAJOR INDUSTRIES

Estimates of sectoral investment were taken from Statistics Canada Catalogue 61-205 which, in the most recent version, provides a preliminary estimate of the actual value of investment that occurred during 1988. While the focus of this project was to determine the value of investment by the private sector, Statistics Canada does not differentiate between public and private investment on a sectoral basis. Thus, to preparing the data for comparison with information on total sales and purchases by the Canadian Parks Services, a number of modifications to the data were required. These modifications are described below.

First, estimates of investment by the construction industry were available only for Ontario, Quebec and British Columbia. As shown in Table E-1, the proportion of investment in the Primary Industry/Construction sector attributable to construction has remained relatively consistent over the last eight years at about 22 percent. This proportion was then used to estimate the amount of investment by the construction industry in the other provinces.

Second, as shown in Table E-2 which summarizes investment data for Canada over the last eight years, the estimates include investment by both the public and private sectors, with the public sector accounting for between 22 and 30 percent of total investment. Additional investment data provided by Statistics Canada are shown in Table E-3 which shows that public investment consisted mainly of government-owned enterprises, institutional and housing, and departmental spending. When compared to the sectoral breakdowns of investment, it was then assumed that:

- All investment in primary, construction, manufacturing and commercial industries was assumed to be by the private sector.

- Investment in utilities, institutional and housing sectors was assumed to be split between the public and private sectors. This split was taken directly from the Statistics Canada information for housing and institutional, while the private-sector component of the utilities sector was calculated as a residual. The resulting distribution of public and private sector investment for these three sectors is shown at the bottom of Table E-3.

Using this differentiation between investment by the public and private sectors, an estimate of investment attributable to just the private sector was then prepared. This estimate is shown in Table E-4.

Third, it was found that expenditure data for the Canadian Parks Services did not differentiate between private and public utilities. Thus, the final estimate of sectoral investment includes spending by both public and private utilities; this estimate is provided in Table E-5.

Table E-1

PROPORTION OF INVESTMENT IN PRIMARY INDUSTRY/CONSTRUCTION SECTOR ATTRIBUTABLE TO CONSTRUCTION

	1982	1983	1984	1985	1986	1987	1988	1989
Quebec	20.34%	23.89%	23.66%	24.14%	28.69%	26.23%	30.02%	29.79%
Ont.	18.46%	19.33%	19.80%	22.14%	27.88%	25.05%	22.10%	21.84%
B.C.	12.51%	12.89%	13.21%	15.11%	15.24%	15.65%	14.23%	14.44%
Average	17.02%	18.27%	18.88%	20.87%	24.46%	22.84%	21.94%	21.75%

Table E-2

INVESTMENT BY INDUSTRY, CANADA, 1982-1989
(Millions of Current Dollars)

	1982	1983	1984	1985	1986	1987	1988	1989
Construction/Primary	21,230.3	20,089.6	20,687.5	21,589.9	17,402.3	17,401.1	19,786.7	19,538.6
Manufacturing	16,374.0	13,869.8	14,634.6	18,652.7	20,769.6	22,620.4	25,246.6	29,308.2
Utilities	23,178.1	21,499.0	20,893.9	20,513.5	20,523.0	21,954.3	25,850.8	28,780.4
Commercial	11,348.8	11,405.8	13,970.4	17,350.3	20,461.5	24,046.4	26,462.2	28,715.7
Institutional	13,986.9	14,024.9	14,867.4	15,341.8	16,969.1	18,337.5	19,584.0	21,722.6
Housing	13,581.6	16,751.4	16,647.3	18,750.1	28,885.3	35,825.3	38,659.6	39,295.1
Total Investment	99,699.7	97,640.5	101,701.1	112,198.3	125,010.8	140,185.0	155,589.9	167,360.6
Total Private Sector	69,832.1	67,820.0	72,069.4	80,560.0	95,599.1	109,682.2	120,906.9	128,345.9
Total Public Sector	29,864.9	29,821.6	29,645.1	29,187.0	29,411.7	30,502.8	34,683.0	39,014.7
Percent Public	29.96%	30.54%	29.15%	26.59%	23.53%	21.76%	22.29%	23.31%

Source: Statistics Canada, Catalogue 91-2105, Public and Private Investment in Canada. Data for 1989 are intentions while 1988 data are preliminary estimates.

Table E-3

PUBLIC AND PRIVATE SECTOR INVESTMENT, CANADA, 1982-1989
(Millions of Current Dollars)

	1982	1983	1984	1985	1986	1987	1988	1989
Private Investment								
Businesses	55,246.0	49,863.2	54,150.5	60,579.9	65,174.2	69,342.2	78,891.8	87,161.8
Institutional & Housing	14,586.1	17,956.8	17,918.9	19,980.1	30,424.9	37,591.1	37,216.9	41,184.1
Total	69,832.1	67,820.0	72,069.4	80,560.0	95,599.1	106,933.3	116,108.7	128,345.9
Public Investment								
Government Owned Enterprises	16,963.2	16,902.1	16,038.3	15,075.2	13,982.2	14,260.0	16,639.9	19,181.1
Institutional & Housing	2,654.8	2,496.5	2,332.7	2,496.2	2,751.4	3,278.4	3,203.2	3,547.2
Departmental Spending	10,372.6	10,423.0	11,263.1	11,615.6	12,678.1	13,150.0	14,208.1	16,286.4
Total	29,990.6	29,821.6	29,634.1	29,187.0	29,411.7	30,688.4	34,051.2	39,014.7
Institutional & Housing								
Public	47.25%	41.98%	43.14%	41.39%	33.65%	30.33%	29.89%	32.50%
Private	52.91%	58.35%	56.86%	58.61%	66.35%	69.40%	63.90%	67.50%
Utilities								
Public	73.19%	78.62%	76.76%	73.49%	68.13%	64.95%	64.37%	66.65%
Private	26.81%	21.38%	23.24%	26.51%	31.87%	35.05%	35.63%	33.35%

Table E-4

ESTIMATED INVESTMENT BY THE PRIVATE SECTOR, CANADA, 1982-1989
(Millions of Current Dollars)

	1982	1983	1984	1985	1986	1987	1988	1989
Primary	17,617.2	16,418.5	16,781.8	17,085.0	14,975.0	14,848.1	16,884.5	16,353.8
Construction	3,613.1	3,671.1	3,905.7	4,504.9	2,427.3	2,553.0	2,902.2	3,184.8
Manufacturing	16,374.0	13,869.8	14,634.6	18,652.7	20,769.6	22,620.4	25,246.6	29,308.2
Private Utilities	6,238.2	4,576.7	4,856.1	4,913.8	6,540.8	7,750.2	9,802.8	9,599.3
Commercial Sector	11,348.8	11,405.8	13,970.4	17,350.3	20,461.5	24,046.4	26,462.2	28,715.7
Institutional & Housing	14,640.8	17,878.1	17,920.8	18,053.3	30,424.9	37,864.1	39,608.6	41,184.1
Total Investment	52,214.9	51,401.5	55,287.6	63,475.0	80,624.1	94,834.1	104,022.4	111,992.1

Source: Statistics Canada, Catalogue 91-2105, Public and Private Investment in Canada. Data for 1989 are intentions while 1988 data are preliminary estimates.

Table E-5

ESTIMATED VALUE OF TOTAL INVESTMENT, BY INDUSTRIAL SECTOR AND PROVINCE, 1988
(Millions of Dollars)

	Primary Industries	Construction	Manufacturing Industries	Utilities	Commercial	TOTAL
Newfoundland	502.2	198.8	348.7	285.3	129.8	1,464.8
P.E.I.	1,490.8	21.2	31.7	23.3	72.8	1,639.8
Nova Scotia	697.1	212.6	475.3	539.4	1,223.3	3,147.7
New Brunswick	240.1	83.8	748.7	421.5	373.4	1,867.5
Quebec	955.4	648.1	7,619.1	5,964.7	3,253.1	18,440.4
Ontario	2,158.1	1,140.6	15,211.5	10,290.3	14,976.4	43,776.9
Manitoba	532.9	234.2	354.8	1,431.4	520.0	3,073.3
Saskatchewan	1,333.0	635.3	505.0	978.6	458.1	3,910.0
Alberta	7,353.9	2,676.0	854.3	2,922.5	2,571.7	16,378.4
British Columbia	2,379.3	335.3	1,970.0	2,921.0	3,499.9	11,105.5
Yukon & NWT	972.2	648.3	7.5	87.7	39.7	1,755.4
Canada	18,615.0	6,834.2	28,126.6	25,865.7	27,118.2	106,559.7

Source: Statistics Canada, Catalogue 61-205, Private and Public Investment in Canada